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ABSTRACT

Distribution of primary school enrollments within and among 15 countries of the Eastern African region was examined by drawing exclusively on routine annual statistics and by emphasizing simple computer-generated indicators. In its first phase, the study made inter-country comparisons that indicated which countries and which areas in the region lagged in terms of educational opportunities. Thereafter, the focus of the investigation shifted to the individual countries: Botswana, Burundi, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Rwanda, Somalia, Sudan (and, separately, the southern region of the Sudan), Swaziland, Tanzania, Uganda, Zaire, and Zambia. Two basic questions were asked: (1) What is the overall degree of inequality in the distribution of primary school enrollments across the districts and between the sexes within countries? and, (2) Which specific districts, urban versus rural locations, and sex groups within these areas fall below or above the national average, and by how much? The main finding was that the degree of inequality in the distribution of educational opportunities varied enormously from one East African country to another. Two countries, Lesotho and Sudan, representing the full range of relatively equal and unequal cases, were reviewed in more depth. Finally, attempts were made to determine how and where to allocate educational investments in order to reduce inequalities both among and within countries. (Author/RH)

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Distribution of Primary School Enrollments in Eastern Africa

Jacob van Lutsenburg Maas

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U.S. DEPARTMENT OF EDUCATION
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Distribution of Primary School Enrollments in Eastern Africa

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ABSTRACT OF THE STUDY

This paper examines the distribution of primary school enrollments within and among the countries of the Eastern Africa Region.

In a first phase, the study makes inter-country comparisons that indicate which countries and which areas in the Region lag in terms of educational opportunities. Thereafter, the focus of the paper shifts from the Region as a whole to the individual countries. Two basic questions are asked: (a) What is the overall degree of inequality in the distribution of primary school enrollments across the districts and between the sexes within a country?; and (b) which specific districts and urban vs. rural locations, or sex groups within these areas, fall below, or above, the national average in their enrollments and by how much? Two countries, Lesotho and Sudan, representing the full range of relatively equal and unequal cases, are reviewed in more depth.

Finally, the paper attempts to determine how and where to allocate educational investments in order to reduce both inter-country and intra-country inequities.

The study draws exclusively on the large amounts of routine annual statistics gathered by countries and emphasizes the use of simple, computer generated indicators to reduce the data into readable form.

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DISTRIBUTION OF PRIMARY SCHOOL ENROLLMENTS

IN EASTERN AFRICA

DISTRIBUTION OF PRIMARY SCHOOL ENROLLMENTS IN EASTERN AFRICA

Introduction

1. A major goal of both Bank Group lending policy and Borrower development policy is to promote the participation in economic development of people who exist on the margins of their societies. The causes of their marginality are various: illiteracy, lack of cash income, or simply distance from the main centers and arteries of economic activity and service delivery, to name only the more obvious ones. Among the various sectors in which Bank Group investments are regularly made, education is one which is expected to play a major role in promoting equal participation in economic development. In the education sector the policy goal of promoting equity usually means extending basic education opportunities to those who lack them. This typically occurs in one of two ways - either providing more adult education programs to low income adults, or investing in formal primary education in regions, districts, or communities which do not have basic educational facilities. Adult education programs provide the possibility of rapid benefits such as raising yields for small farmers, increasing awareness of new techniques, creating a family planning consciousness, or broadening participation in community affairs. However, the social equity effects of opening primary school opportunities to new target populations are potentially more profound. This study has therefore chosen to concentrate exclusively on the distribution of primary school enrollments within a number of Eastern Africa countries.(1)

2. Within that context the study seeks to answer only a few of the many questions that can be raised. In a first, descriptive phase it attempts to answer two basic questions:

(a) What is the overall degree of inequality in the distribution of primary school enrollments across the districts and sex lines within a country?, and

(b) which specific areas, or sex groups within these areas, fall below or above the national average in their enrollments and by how much?

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1. Eastern Africa Region is defined by the World Bank to include: Botswana, Burundi, Comoros, Djibouti, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Somalia, Sudan, Swaziland, Tanzania, Uganda, Zaire, Zambia and Zimbabwe. In this study, the Southern Region of the Sudan is treated as though it were a separate country, in addition to being a part of the Sudan as a whole. This is because primary education in the Southern Region has distinct characteristics and is, in fact, administered semi-autonomously by the Southern Regional Government in Juba.

The first question will be answered by the use of Gini coefficients and Lorenz curves. The second question will be answered mainly by the use of representation indices (RI), enrollment participation rates (PAR), and pyramid ratios (PYR). These indices will be defined below.

3. At first, the study stresses inter-country comparisons, developing some possible generalizations and "normal" ranges of inequality for the Eastern Africa Region. This comparison indicates which countries and which groups/areas in the Region lag in terms of distribution of educational opportunities. Subsequently, the focus of the study shifts from the Region as a whole to the individual countries, thus adding a micro-perspective to the overview. The country analysis will be limited to two country case studies. The two selected countries, Sudan and Lesotho, represent situations of (relatively) extreme inequity and equity in the distribution of educational opportunities. These case studies illustrate the enormous potential for further intra-country analyses which can be found in the annex material of the study. Finally, the study performs an exercise in determining how and where to allocate educational investments to raise primary enrollments in the most under-represented areas of the few most under-represented countries in the Region, and thereby make significant reductions both in inter-country inequality and in intra-country inequality in the poorest countries.

4. The study concentrates on the practical concerns of educational planners who are faced with the immediate task of alleviating an unequal distribution of school resources and opportunites. Each year almost every nation collects vast numbers of enrollment figures successively broken down by grade, by sex and by district and sub-district. Considerable manpower is absorbed in this data collection, tabulation and presentation effort. But after the publication of the aggregated numbers, insufficient use is made of this mountain of statistics.(2) This underutilization is partly explainable by the sheer quantity of numbers. Some method of reducing large series of numbers into ratios or other indices is needed, but that process has, at least until the advent of computerized data processing, only added to the expenditure of scarce manpower. This study, therefore, is a first attempt to see how much more planning value can be extracted from the most routinely collected educational statistics, without collecting one additional fresh datum. The data reduction for the study was performed on a new computer program developed by World Bank Computing

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2. The reliability of the statistical data used in this study is certainly not absolute. However, the comparative nature of the study does not require perfect accuracy of the statistical material, as the study intends to provide an indication of relative levels of inequity in the distribution of educational opportunities in Eastern Africa, rather than to determine absolute inequity coefficients.

Activities Department in consultation with education project staff - the School Location/Allocation Planning System (SLP).

5. For the education planner concerned primarily with one country, each country data set will give him a review of the inequality in the distribution of enrollments and the pyramid shape of enrollments within each district, by sex. It will also indicate him where and to what extent to increase enrollment in order to reduce optimally the existing inequities. For World Bank management and staff in the Eastern African Region, one of the major contributions of the study is the determination of Region-specific norms and ranges of inequality. By generating Gini coefficients summarizing the unequal distributions of school places in each country, we can begin to have a feel for what is relatively "normal" and what is "extreme inequality" in the distribution of primary school opportunities in the countries of Eastern Africa. With this new information we can better determine when and when not to raise unequal distribution as an issue. At this time, when the need to maintain financial solvency is tending to push aside other development goals in many African countries, it is more important than ever to develop tools and criteria to determine when equity should be retained as a relevant goal.

Indices for Measuring Educational Equity

6. The main tools for identifying areas of advantage and disadvantage and for assessing the degree of inequality across a country are the RI and the Gini Coefficient.

A. Representation Index (RI)

7. The RI indicates whether a given group or area is under-or over-represented, and to what degree, with respect to the distribution of a scarce resource. For example, in education, a district can be under-or over-represented in its particular share of school places compared to its proportion of the relevant school-going age group. In arithmetical terms, for any district which is a sub-set of the whole set (usually a country),

$$(a) \quad RI = \frac{e : E}{p : P}$$

where E is total, national enrollment,
P is total, national relevant age group population,
e is the number enrolled in the i^{th} district,

p is the number in the relevant age group population in the i^{th} district.

Or, in plain language, for each district:

$$RI = \frac{\text{Percent of scarce resource, e.g., enrollment}}{\text{Percent of distribution basis, e.g., population}}$$

Thus, for example, a district with 20% of primary school enrollment in the nation but 30% of the age group in the nation would have an RI of

$$\frac{20\%}{30\%} = 0.67$$

Indices over 1.0 indicate over-representation; indices below 1.0 indicate under-representation. With respect to school enrollments specifically, another way to define a district's RI is to divide its enrollment rate by the national enrollment rate. So, for example,

$$(b) \quad RI = \frac{e \ : \ Pi}{E \ : \ P}$$

Or, again, in plain language:

$$RI = \frac{\text{Enrollment rate of district}}{\text{Enrollment rate of country}}$$

Either way, the resulting RI values will be identical for any given district.

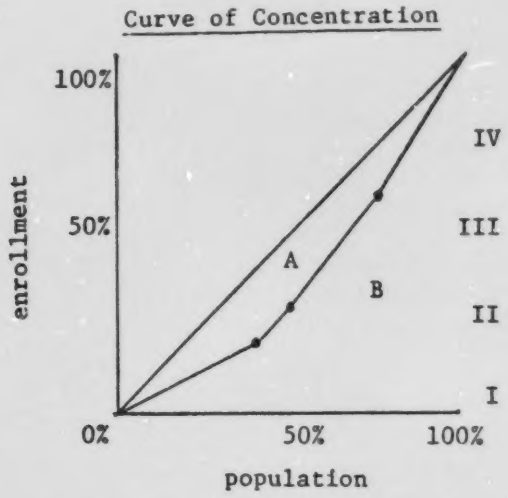
B. Gini Coefficient

8. Whereas the RI is a measure of comparative disadvantage for one group or area, the Gini coefficient is a single statistic summarizing relative inequality across all groups or areas at once. It is commonly used by economists to measure inequality between income groups, but it is equally useful in portraying unequal distributions of other scarcities across groups in a population.

9. The simplest way to understand the Gini coefficient is to begin by plotting the shares of enrollment and population for four districts (to keep it simple) on a two-dimension space or "x, y" axis, as in the following table and graph.

District	(a) Share of School-Age Population		(c) Share of Enrollment		(e) RI
	Percent Share	Cumulated Percent	Percent Share	Cumulated Percent	
I	40%	40%	20%	20%	0.5
II	10	50	10	30	1.0
III	25	75	30	60	1.2
IV	25	100	40	100	1.6
Total	100%		100%		

10. For convenience these provinces have been placed in descending order of advantage - the most under-represented is first (I) etc.



11. If one begins with the district with the lowest RI, and cumulatively plots enrollment share against population share, district by district, one arrives at a so-called "Lorenz" curve of concentration bulging below the diagonal. (Were all districts to have exactly proportional representation, indicating absolute equality, the plot would follow the diagonal precisely). The Gini coefficient (G), then, is equal to the shaded area, A, between the diagonal and the curve, as a percentage of the whole area of the right triangle below the diagonal, or A + B. The Gini

coefficient can be computed by hand by proceeding with the following steps, using the same simplified example as above, adhering to the same district order, but expressing percents as decimals:

District	(f) Share of School-Age Population (same as col.(a))	(g) Sum of Consecutive Enrollments (refer to col.(d))	Products of Two Previous Columns (f) (g)
I	0.40	0.20	0.080
II	0.10	0.50	0.050
III	0.25	0.90	0.225
IV	0.25	1.60	0.400
Total			0.755

G = 1 - 0.7555 = 0.245

12. The range of possible Gini coefficients is from 0.0, representing absolute proportionality or equality, up to 1.0 representing complete monopoly or inequality. This is the hypothetical situation when one person monopolizes the entire supply of a scarcity. In the real world, however, a Gini coefficient on primary education will only rarely go above 0.5.

13. It has to be recalled that the Gini coefficient is only a measure of relative inequality, and does not provide an indication of the absolute levels of provision of a social service or economic good. Specifically, an ideal Gini coefficient of 0.0 means that the available resources of a country are perfectly distributed, but does certainly not mean that everybody is well endowed with those resources. The least advantaged population groups or regions in a country with an extremely inequitable distribution of a specific good may be better off in absolute terms than the most advantaged population groups or regions in a country with a highly equitable distribution of that good. It is therefore essential that Gini coefficients are always confronted with indicators of absolute provision, i.e., with ordinary enrollment participation rates (PAR).

C. Pyramid Rate and Index

14. A pyramid rate for a district in a country and the country as a whole, is the enrollment in any upper grade as a percent of enrollment in the first grade of a cycle. When a district's pyramid rate is divided by the national pyramid rate, a pyramid index is obtained. The lower the pyramid rate in a district, the greater its "slope," which may in many circumstances be taken to indicate high rates of attrition in the upper grades. The main exception is when enrollment in the base grades are suddenly extended due to a recent introduction of universal primary education, e.g., in Tanzania in recent years.

Techniques in Planning for Redistribution

15. The study examines the sensitivity of the above indices of unequal distribution to planned increases in enrollment. For this exercise, the existing enrollment in each Eastern African country is increased by a target amount which is then allocated to the different regions or districts of the country such as to maximize the reduction of educational inequities.(3) This exercise is performed (on SLP) by the following steps. First, a target increment in national primary enrollment is selected, in this case 10% of the existing enrollment.(4) This incremental amount is then allocated to the poorest districts through a "bump-up" technique. The procedure begins by rank-ordering all districts by their respective RI's for all grades combined. Beginning with the district with the lowest RI, enrollment places are added to this district to "bump" it up until its RI reaches the RI level of the district with the second lowest RI. Then both of these districts are bumped together up to the RI level of the third lowest district and so on until the target increment is exhausted. Thereupon, a revised Gini coefficient and revised representation indices are calculated and compared to the initial values of the indicators to show their sensitivity to such an increase. The exercise identifies the districts in which enrollment should be increased and by what specific amounts. In addition, the equity effect of the enrollment increase is quantified. Tables 1, 4 and 5 summarize some of the results of this "bump up" exercise.

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3. This hypothetical planning exercise is done for each country in the Eastern Africa Region, but also for the Region as a whole.

4. A 10% increase in enrollments seems unrealistic in certain Eastern African countries. The high figure has been chosen for theoretical purposes, as it provides a better idea of how school places should eventually be allocated. A more realistic increment of 1.5% has been used in a later section dealing with concrete policy guidelines for the Eastern Africa Region.

16. The "bump up" technique is not without limitations. The technique allocates school places wherever disparities are the greatest. However, the districts with the lowest RI's undoubtedly have them for real, identifiable reasons: demographic, historical, geographic, and especially, financial. The trade off, at a given cost, between adding more school places, which probably means adding to already advantaged areas, and minimizing overall inequities, but at a probably higher unit cost, is in the final analysis a political issue without an obvious solution.

17. For each of the 16 Eastern Africa countries in the study, four standard matrices with enrollment and population data, by grade or age, were prepared in the following sequence: (a) males only, (b) females only, (c) both sexes mixed, and (d) total males and then females shown separately within each district. Thus in matrices (a), (b) and (c) the number of rows of each matrix is equal to the number of districts, while in (d) it is double that number. Extracts of key indicators from these matrices, together with maps and Lorenz Curves are arranged by country and placed in the Annex. For the education planner concerned primarily with one country, each country data set will give him a review of inequality in distribution of enrollments and the pyramid shape of enrollments within each district, by sex.

The Findings - Highlights

18. The main finding of the study is that the degree of inequality in the distribution of educational opportunities varies enormously from one Eastern African country to another. Some countries enjoy a highly proportional distribution, whereas other countries experience enormous disparities in the allocation of enrollment places among districts, between the urban and rural areas and between the sexes.

19. The top section of Table 1 (pg 11) shows the Gini coefficients for the internal distribution of enrollments in 16 countries, and for each of the four matrix sets within them. The range of Gini coefficients in the total male plus female matrix, before the incremental allocation by bump-up, goes from a low of 0.06 for Swaziland to a high of 0.558 for the Southern Sudan, i.e. a very wide range by a factor of nearly 10. In trying to identify the types of countries which fall at either end of the range, it is useful to correlate Gini coefficients and the gross national enrollment rates(5) shown in the last column of Table 1. The strong inverse

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5. In the analysis of the participation rates, it has to be recalled that the length of the primary school cycle differs from country to country in Eastern Africa. Whereas the cycle includes 8 grades in Malawi, it has only 6 grades in Ethiopia, Somalia, Sudan, Zaire and Burundi, and only 5 grades in Madagascar. However, as pointed out later in the report, these latter countries (with the exception of Zaire and Madagascar), even with a shorter primary school cycle, have the lowest enrollment rates in the Region, thus reinforcing the conclusions of this study.

relationship between the two indices (r = -.76) can be seen clearly in the scatter plot in Figure 1: countries with relatively high national participation rates have a relatively more equal distribution of enrollments, i.e. a low Gini coefficient; countries with relatively low national enrollments, have a relatively less equal distribution of enrollments, e.g. a high Gini coefficient. In other words, the degree of relative inequity in the allocation of educational opportunities is negatively correlated to the absolute level of provision of the social service. Both elements are, in fact, mutually reinforcing.(6)

20. Those countries with higher participation rates, i.e. above 50%, have Gini coefficients ranging from a low of 0.06 for Swaziland(7) to a high of 0.252 for Malawi.(8) At the opposite end of the range, countries with low national enrollment rates have Gini coefficients starting from a low of 0.363 for the Sudan and reaching 0.558 for the Southern Region of the Sudan. These highly inequal internal distributions are most likely due to the weak penetration of civil authority from the administrative core to the periphery. The case of the Southern Sudan tends to demonstrate this syndrome as the highest RIs are concentrated on Juba and Malakal, two important administrative centers. The enrollment rate in Juba is actually over 100% while in several remote districts it is between 5% and 7%, and even as low as 1% for females alone in some districts (See Annex). In fact the level of development of general education in the Southern Sudan as a whole appears to be at least three decades behind the average of the Eastern Africa Region.

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6. The international use of the Gini coefficient and RI index is of interest in a relatively homogeneous region such as East Africa. In a more diverse region such as North Africa, where GNP per capita ranges from US$460 in Egypt to US$1,120 in Tunisia (figures for 1979), those coefficients should be interpreted with care. For example, the use of school age children for farm labor is probably higher in rural areas in Egypt than in rural areas of Tunisia, where agriculture is more highly mechanized. This, ceteris paribus, reduces enrollment rates in Egypt in relation to Tunisia.

7. On the surface, the Gini coefficients suggest that Swaziland has achieved the most equal distribution in enrollment places. This is partly misleading. Swaziland has only four districts, while Tanzania has 92 districts. In computing Ginis, the fewer the number of districts, other things being equal, the lower the Gini. Swaziland and Tanzania are the extreme opposites in number of districts. If we were to aggregate the Tanzanian data into four super-districts, its resulting Gini coefficient would be closer to Swaziland's.

8. In the somewhat anomalous case of Malawi, the high Gini coefficient and the low national enrollment rate can partially be explained by the exceptional length of the primary school cycle, eight years.

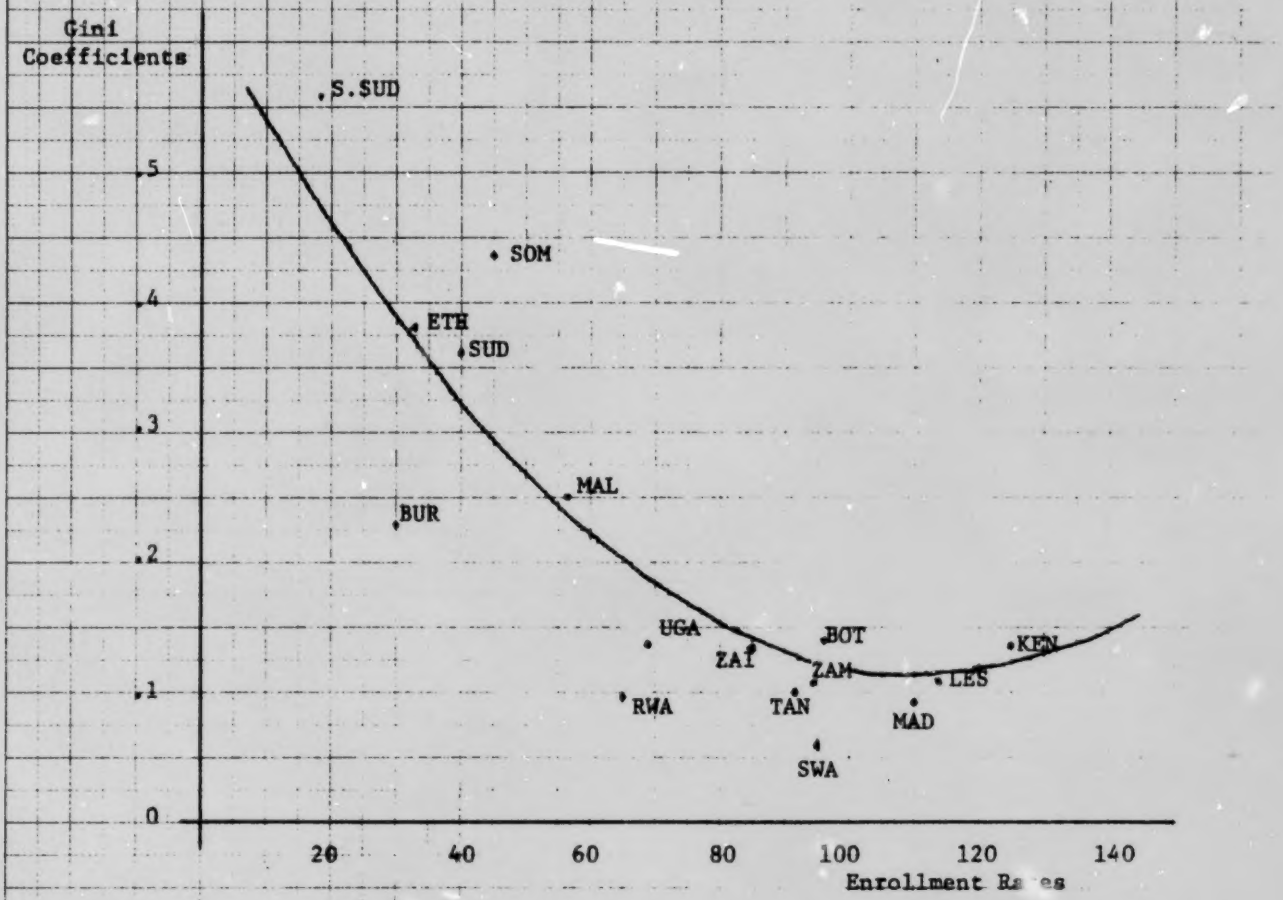
Table 1

GINI COEFFICIENTS FOR DISTRIBUTION OF PRIMARY SCHOOL ENROLLMENT WITHIN AND ACROSS COUNTRIES BEFORE AND AFTER THE ALLOCATION OF A 10% INCREMENT BY BUMP-UP PROCEDURE
ALL GRADES

Country	Year	Males Only	Females Only	Mixed Sexes		Males and Females Separately by Districts		National Enrollment rates before Bump-up
		Before Bump-Up	Before Bump-up	Before Bump-up	After Bump-up	Before Bump-up	After Bump-up	%
Botswana	1979	0.113	0.120	0.108	0.031	0.141	0.080	96.1
Burundi	1979	0.191	0.195	0.188	0.109	0.229	0.160	25.5
Ethiopia	1979	0.322	0.295	0.310	0.221	0.382	0.297	32.8
Kenya	1979	0.121	0.136	0.124	0.041	0.134	0.058	124.5
Lesotho	1977	0.088	0.021	0.043	0.000	0.107	0.061	114.2
Madagascar	1976	0.085	0.085	0.085	0.014	0.096	0.024	110.0
Malawi	1979	0.178	0.305	0.207	0.123	0.252	0.171	56.9
Rwanda	1980	0.078	0.094	0.081	0.026	0.092	0.028	64.0
Somalia	1979	0.375	0.479	0.407	0.312	0.438	0.438	45.1
Sudan	1978	0.290	0.401	0.330	0.140	0.363	0.193	40.1
Southern Sudan	1978	0.445	0.635	0.489	0.396	0.558	0.442	18.4
Swaziland	1979	0.060	0.056	0.057	0.013	0.060	0.026	94.6
Tanzania	1978	0.078	0.102	0.086	0.022	0.100	0.046	90.7
Uganda	1978	0.123	0.099	0.092	0.032	0.139	0.056	68.7
Zaire	1976	0.137	0.137	0.137	0.077	0.180	0.083	84.6
Zambia	1977	0.103	0.081	0.091	0.032	0.103	0.057	93.8
All 16 countries						0.194	0.139	72.5

Figure 1

Relationship Between Unequal Distribution And Enrollment Rates For 16 Eastern African Countries



21. Figure 1 highlights a sub-Regional cleavage between the countries in the Region's northern tier and the others. Sudan (especially Southern Sudan), Ethiopia, and Somalia form a cluster of countries with very low enrollment and a very high degree of inequality represented by Gini's in excess of 0.363. The remaining countries except Burundi all have both higher enrollment ratios and lower Gini coefficients. This clustering at opposite ends of the curve calls for an attempt at explanation and an appropriate policy response. Two speculative hypotheses emerge, both of which are largely historical:

(a) Throughout most of Sub-Saharan Africa modern systems of education were either initiated or given a major impetus by Christian missionary societies. Except in the Equatoria province of the Southern Sudan, where the RIs today are generally high, these agencies were not notably active in the northern cluster countries;

(b) more recently, these countries have also seen the interruptive effects of civil turmoil, war and revolution on their sustained long-term, development efforts. Except possibly for Uganda, the other countries in Figure 1 have been spared this latter factor.

22. Among the twelve countries toward or at the lower end of the scale in Figure 1, the relation between higher enrollment and less inequality weakens somewhat. Tanzania, with an enrollment rate of somewhat less than 95% has achieved virtually the same 0.1 Gini coefficient as Lesotho with a 114% enrollment rate. Indeed, Kenya, Lesotho and Madagascar demonstrate an interesting propensity to curvilinearity in the relationship between enrollment rate and Gini coefficient: once the 100% enrollment rate is surpassed, the Gini coefficient increases rather than decreases. This is perhaps due to the fact that some more wealthy districts permit students to engage heavily in grade repetition to improve their promotion chances into secondary education.

23. The almost perfect curvilinear relationship ($r2 = 0.67$) between equity and participation rates adds an interesting predictive perspective to the descriptive results of the study. Knowing the quadratic function which fits the relationship,(9) and given a certain enrollment rate, the degree of inequality (Gini) in the distribution of educational opportunities in a given country in Eastern Africa can be estimated. Unfortunately, by lack of empirical data, it remains an open question whether, and if so at what point, the right side of the curve will again decrease.

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9. Curvilinear regression analysis has found following equation to fit the scatter plot GINI = 0.6249 - 0.009255 PAR + 0.0000418 (PAR)2. The R square equals 0.667, and the standard deviation amounts to 0.087.

Urban-Rural Disparity

24. It is a common assumption that urban areas, especially the capital cities, enjoy unparallelled educational advantages over the more rural districts in developing countries. The data in Table 2 taken from the mixed sex matrix reveal that this is true only in slightly more than half the cases under review here. Again the Region's four northern tier countries (including Southern Sudan) constitute the more extreme cases of urban privilege, as Table 2 shows, followed by Madagascar and Burundi.

Table 2

REPRESENTATION INDICES OF MAJOR URBAN CENTERS IN 16 COUNTRIES

COUNTRY	MAIN CITIES		RI
Botswana	Gaborone		0.66
	Francistown		0.82
Burundi	Bujumbura		1.88
Ethiopia	Addis Ababa		2.97
Kenya	Nairobi		0.74
	Mombasa		0.63
Lesotho	Maseru		0.74
Madagascar	Antanarivo		1.94
Malawi	Blantyre		1.66
Rwanda	Kigali		1.29
Somalia	Mogadishu		2.75
Sudan	Khartoum		2.01
S. Sudan	Juba		5.93
Tanzania	Dar-es-Salaam	- Kinondoni	0.84
	"	- Ilala	1.04
	"	- Temeke	0.75
Uganda	Kampala		1.22
Zaire	Kinshasa		1.00
Zambia	Lusaka		0.70

Male-Female Disparity

25. Table 3 shows that males are over-represented in all the countries except Botswana and Lesotho. The most extreme instances of male advantage are, once again, found in the northern tier countries (plus Malawi), as but one more dimension of their overall strong tendency toward unequal distribution.

Table 3

MALE-FEMALE REPRESENTATION LEVELS IN 16 COUNTRIES

	Male		Female	
	RI	PAR	RI	PAR
Botswana	0.887	85.2%	1.114	107%
Burundi	1.211	30.9	0.788	20.1
Ethiopia	1.330	43.7	0.655	21.5
Kenya	1.058	131.8	0.942	117.4
Lesotho	0.830	95.0	1.164	133.0
Madagascar	1.063	116.9	0.939	103.3
Malawi	1.235	70.3	0.781	44.5
Rwanda	1.050	67.2	0.951	60.9
Somalia	1.229	55.4	0.751	33.9
Sudan	1.232	49.4	0.779	31.2
S. Sudan	1.389	25.5	0.552	10.1
Swaziland	1.013	95.9	0.987	93.5
Tanzania	1.081	98.0	0.918	83.3
Uganda	1.132	77.7	0.863	59.3
Zaire	1.189	100.6	0.803	68.0
Zambia	1.068	100.1	0.931	87.3

PAR = Participation (enrollment) rate

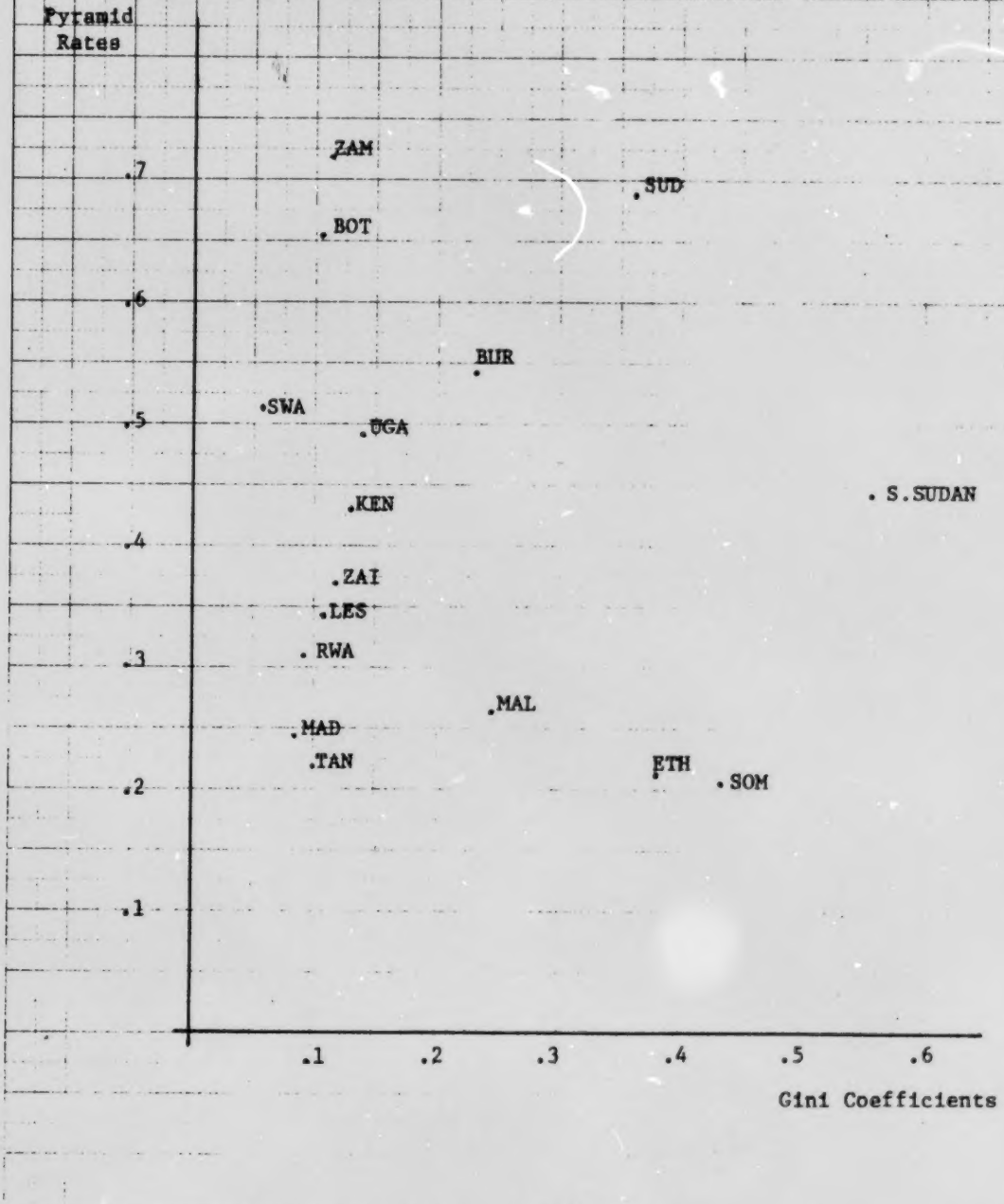
Equity and Apparent Attrition

26. The study has not found a strong link between the degree of inequity in the allocation of educational opportunities and the slope of the educational pyramid, as measured by the pyramid rate. In this instance the pyramid rate is used as a proxy measure of system efficiency.(10) Figure 2 shows that countries with relatively high Gini coefficients tend to have lower pyramid rates and therefore apparently greater attrition between grade rates (with the notable exception of the Sudan), but countries with relatively low Gini coefficients do not necessarily enjoy high pyramid rates. In other words, the relationship between equity and system efficiency, as measured by pyramid rates, is weak.

10. The pyramid rate is only one of the many indicators of educational efficiency. As noted previously, it is believed to reflect the attrition rate from one grade to the next in a school system. High pyramid rates might also suggest unusually low and stable enrollment rates (e.g. Sudan).

Figure 2

Relationship Between Unequal Distribution And Pyramid Ratios For 16 Eastern African Countries



Two Country Case Studies

27. A further use of the study consists in making country-by-country analyses of male-female, urban-rural, and inter-district disparities. One example from the northern ties of states and another from the southern countries have been chosen in order to contrast between the two groups of countries.

28. Sudan: The formal system of primary education in the Sudan consists of a 6-year cycle, for the 7-12 year age group. In 1977/78, enrollment in Sudanese primary schools amounted to 1,015,300 pupils (about 60% boys), which represented only 40.1% of the population between ages 7 and 12. Completion rates, as measured by the the pyramid rates, were close to 70%: 68.2% for male and 72.3% for female enrollments. The progression rate from the primary schools to the secondary schools was about 33%.

29. These figures represent a national average, behind which lie enormous inter-provincial inequities. The inter-provincial Gini coefficient for mixed enrollment amounted to 0.330, which was well above the Eastern Africa average. The fact that the Gini coefficient was as high as 0.401 for female enrollment, compared to 0.29 for male enrollment, already illustrates that regional inequities (reflecting social, economic and social inequality) were accentuated within the female population.

30. Participation rates reflected a range from almost 100% in the Nile province, to an exceptionally low 7.4% in the remote (southern) Lakes province (as Table 4 shows).

Table 4

PARTICIPATION RATES FOR PRIMARY ENROLLMENT PER PROVINCE IN THE SUDAN, 1977-78
(TOTAL GRADES)

Provinces	Male	Female	Mixed
Northern	0.70	0.67	0.68
Nile	1.00	0.86	0.93
Khartoum	0.81	0.71	0.76
Red Sea	0.56	0.48	0.52
Kassala	0.43	0.32	0.38
El Gazira	0.60	0.55	0.57
White Nile	0.54	0.23	0.39
Blue Nile	0.56	0.30	0.43
N. Kordofan	0.23	0.19	0.21
S. Kordofan	0.58	0.31	0.45
N. Darfur	0.42	0.18	0.30
S. Darfur	0.16	0.10	0.13
Upper Nile	0.25	0.10	0.18
Jonglei	0.15	0.03	0.18
Lakes	0.11	0.03	0.07
E. Equatoria	0.48	0.21	0.35
W. Equatoria	0.60	0.28	0.45

The participation rates for females were consistently lower, province by province, than those for males. Their under-representation was accentuated in the poorest areas of the country.

31. The table of provincial RI's, Table 5, reinforces the picture of the educational under-representation of the southern regions, particularly among females (see also Annex Map).

Table 5

REPRESENTATION INDEX FOR PRIMARY ENROLLMENT PER PROVINCE IN THE SUDAN, 1977-78
(TOTAL GRADES)

Provinces	Male	Female	Mixed	Total	
				Male	Female
Northern	1.56	2.14	1.79	1.92	1.67
Nile	2.24	1.75	2.43	2.75	2.14
Khartoum	1.82	2.29	2.00	2.24	1.78
Red Sea	1.25	1.54	1.37	1.55	1.20
Kassala	0.97	1.01	0.99	1.19	0.79
El Gazira	1.34	1.76	1.50	1.65	1.37
White Nile	1.22	0.75	1.03	1.50	0.59
Blue Nile	1.25	0.97	1.14	1.54	0.75
N. Kordofan	0.53	0.61	0.56	0.65	0.47
S. Kordofan	1.29	0.99	1.18	1.60	0.77
N. Darfur	0.94	0.59	0.79	1.16	0.46
S. Darfur	0.35	0.31	0.33	0.43	0.24
Upper Nile	0.55	0.33	0.48	0.68	0.26
Jonglei	0.45	0.11	0.33	0.56	0.90
Bahr El Gaz	0.34	0.16	0.27	0.42	0.12
Lakes	0.34	0.09	0.19	0.31	0.07
E. Equatoria	0.25	0.67	0.91	1.32	0.52
W. Equatoria	1.07	0.90	0.19	1.66	0.70

32. The regional differences in the distribution of educational opportunities are striking. For instance, the Nile province (in the North) had a representation index of 2.43 (mixed sexes), whereas the same index for the Lakes province (in the South) was as low as 0.190. The last two columns in Table 5 compare for each district respectively the male and the female school populations not with the total male and the total female age groups in those districts, but with the global male and female population in each district. The obtained "total" 36 - cell matrix, as it is called to distinguish it from the other 18 - cell matrices, reveals important sex disparities in the distribution of primary school places. For example, a simple comparison of the RI's in the separate male and female matrices for the North Kordofan district, misleadingly suggests greater educational deprivation among the males than among the females. In fact, all that particular comparison shows is that in North Kordofan the males were more under-represented (RI = 0.53) among all Sudanese males than the females were (RI = 0.61) among all Sudanese females. When both the males and the females in North Kordofan are compared to the global male and female population in that district, it appears that the female

under-representation (RI = 0.47) was more severe than that of the males (RI = 0.65).

33. Inequity is also reflected in the differences in apparent efficiency, as measured in proxy fashion by the pyramid rate. Table 6 displays the rank-ordered pyramid rates and pyramid indices for mixed enrollment in Sudanese primary schools. The pyramid index compares the pyramid ratios of each region with the national pyramid ratio, which serves as a constant divisor.

Table 6

PYRAMID RATIO AND PYRAMID INDEX FOR TOTAL PRIMARY ENROLLMENT IN THE SUDAN, 1977-78 (GRADE 6)

Provinces	Pyramid Ratio	Pyramid Index
Jonglei	0.20	0.29
W. Equatoria	0.32	0.47
Upper Nile	0.46	0.66
E. Equatoria	0.48	0.69
Bahr El Gaz	0.51	0.74
N. Darfur	0.55	0.79
S. Kordofan	0.57	0.81
Lakes	0.57	0.82
Blue Nile	0.57	0.82
Red Sea	0.58	0.83
White Nile	0.65	0.93
Kassala	0.65	0.94
S. Darfur	0.68	0.97
Nile	0.71	1.03
N. Kordofan	0.78	1.14
El Gazira	0.79	1.12
Northern	0.81	1.17
Khartoum	1.02	1.21

No Southern province had an above national average pyramid ratio. Only five Northern provinces had pyramid indexes that were slightly lower than unity.

34. The "bump up" allocations of a 10% enrollment increase in the Sudan (Table 7) are not surprisingly mainly directed towards the southern provinces (and in those provinces towards the females).

Table 7

TOTAL BUMP UP ALLOCATIONS IN THE SUDAN, 1977-78

Provinces	Bump Up Amounts
Northern	0
Nile	0
Khartoum	0
Red Sea	0
Kassala	0
El Gazira	0
White Nile	0
Blue Nile	0
N. Kordofan	11464
S. Kordofan	0
N. Darfur	0
S. Darfur	25613
Upper Nile	8191
Jonglei	7074
Bahr El Gaz	28037
Lakes	21147
E. Equatoria	0
W. Equatoria	0
TOTAL	101526

Even with a 10% increase in enrollment (i.e., 101,526 school places) the distribution of educational opportunities remains very inequitable in the Sudan. The revised Gini following the bump up still amounts to 0.14.

35. Lesotho: Formal education in Lesotho consists of seven years of primary education. In 1977, total enrollments were about 226,300, equivalent to about 133% of the female and 95% of the male population aged 6-12. The national completion rate was low (32.2%) but was higher for females (41%) than for males (22.4%). The progression rate from the primary to the secondary schools was about 28%.

36. Primary school enrollments are relatively equitably distributed in Lesotho. The national inter-regional Gini coefficient for mixed enrollments amounted to 0.043 in 1977 (as compared to 0.330 for the Sudan). The comparatively high total male and female Gini coefficient of 0.107, taking also into account imbalances based on sex, is a first indication that in Lesotho male-female disparities were more important than the inter-district inequities. Indeed, the Gini for total male enrollment amounted to 0.088, whereas the Gini for total female enrollment amounted to a very low 0.021.

37. Participation rates were extremely high (Table 8). They ranged from 96.4% in Mokhotlong to 124.3% in Berea. Important discrepancies existed however between male and female participation rates.

Table 8

PARTICIPATION RATE FOR PRIMARY ENROLLMENT PER DISTRICT IN LESOTHO, 1977
(TOTAL GRADES)

Districts	Male	Female	Total
Butha-Buthe	1.10	1.34	1.22
Leribe	1.12	1.33	1.23
Berea	1,11	1.30	1.24
Maseru	1,03	1.40	1.22
Mafeteng	0.89	1.38	1.14
Mohaleshoek	0.76	1.30	1.03
Quthing	0.77	1.24	1.02
Qacha Nek	0.85	1.29	1.07
Mokhotlong	0.65	1.25	0.96

38. The consistent under-representation of male students in Lesotho appears even more clearly in Table 9, specifically in the comparison of male and female RI´s in the "total" matrix columns on the right. It appears furthermore that the more densely populated lowlands (Butha-Buthe, Leribe, Berea, and Maseru) were slightly over-represented in terms of primary enrollments in the mixed column, whereas the more isolated Eastern highlands were under-represented as far as primary school places were concerned (see Annex Map).

Table 9

REPRESENTATION INDEX FOR PRIMARY ENROLLMENT PER DISTRICT IN LESOTHO, 1977
(TOTAL GRADES)

Districts	Male	Female	Mixed	Total	
				Male	Female
Butha-Buthe	1.15	1.00	1.06	0.95	1.16
Leribe	1.17	0.99	1.06	0.97	1.15
Berea	1.15	1.03	1.08	0.95	1.20
Maseru	1.08	1.04	1.06	0.89	1.21
Mafeteng	0.93	1.03	0.99	0.77	1.20
Mohaleshoek	0.79	0.97	0.90	0.66	1.13
Quthing	0.81	0.93	0.88	0.67	1.08
Qacha Nek	0.89	0.96	0.93	0.74	1.12
Mokhotlong	0.68	0.94	0.84	0.57	1.10

39. The regional differences in educational efficiency in the Lesotho school system, as measured by the pyramid rate and index, reinforces the geographical pattern of inequity mentioned above. All the districts located in the lowlands had pyramid indexes greater than unity, whereas in the mountaneous East only Mafeteng had a slightly above average pyramid ratio. However, perhaps more important than inter-district differences are the low overall pyramid rates, as compared to those in Sudan.

Table 10

PYRAMID RATE AND PYRAMID INDEX FOR TOTAL PRIMARY ENROLLMENT PER DISTRICT IN LESOTHO, 1977 (GRADE 7)

District	Pyramid Rate	Pyramid Index
Mokhotlong	0.199	0.617
Qocho sack	0.200	0.619
Quthing	0.218	0.675
Mohaleshoek	0.241	0.747
Mafeteng	0.353	1.095
Maseru	0.365	1.133
Berea	0.367	1.140
Leribe	0.380	1.179
Buthe - Buthe	0.386	1.198

40. Perfect equity in the distribution of primary school enrollments in Lesotho could be obtained at relatively little cost. If total enrollment in Lesotho were to be increased selectively by 7.8% (17,650 school place) the RI´s of all districts would be lifted up at the RI level of Berea (124% participation rate). This would require on investment of approximately US$530,000. However, such an action hardly seems necessary or justifiable since it would appear to mean over-provision, besides limited additional expansion to the two or three districts with lowest participation rates. For the other districts, the more appropriate measure suggested by the usually low pyramid rates is to shift use of school places from lower grades to the upper grades, perhaps by reducing repetition in the former. The table below displaying mixed grade by grade participation rates further confirms and illustrates in detail the over and under enrollment in the lowest and highest grades, respectively in all districts.

Table 11

PARTICIPATION RATE FOR TOTAL ENROLLMENT IN PRIMARY SCHOOLS IN LESOTHO, 1977 BY DISTRICT/GRADE

	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
Butha-Buthe	1.63	1.34	1.43	1.33	1.09	0.83	0.77
Leribe	1.73	1.38	1.35	1.21	1.13	0.82	0.81
Berea	1.77	1.48	1.43	1.14	1.06	0.84	0.80
Maseru	1.81	1.40	1.36	1.14	1.00	0.83	0.81
Mafeteng	1.73	1.36	1.27	1.02	0.92	0.73	0.75
Mohaleshoek	1.70	1.22	1.22	0.92	0.88	0.60	0.50
Quthing	1.72	1.27	1.18	0.93	0.78	0.56	0.46
Qacha'Snek	1.92	1.27	1.22	0.95	0.82	0.62	0.47
Mokhotlong	1.72	1.17	1.13	0.86	0.76	0.47	0.42

A Possible Action Program

41. The above discussion demonstrates that the traditional inequalities which exist within many countries, male-female and urban-rural, are most severe in the cluster of northern tier countries in which overall enrollments are lowest. The country material in the annex and the two case studies above also demonstrate the inequalities which exist between rural districts especially in the northern countries.

42. Assuming resources could be found, where should an investment be made to reduce most the inter-country and intra-country enrollment inequalities? What would the cost implications of such an investment be? In which countries, and in which areas of these same countries should investments be made? To conduct this exercise ungraded enrollment and estimated population data were also assembled for the Comoros and Mauritius so that almost all Borrower countries in the Region could be included in a brief global equity analysis.(11) The basic data and indices for all the countries are shown in Table 12. The Gini coefficient is 0.253. The Lorenz curve is shown in Figure 3.

11. Three countries have not been included: Seychelles, Djibouti, and Zimbabwe.

Figure 3

Lorenz Curve for
Total Primary Enrollment in Eastern Africa

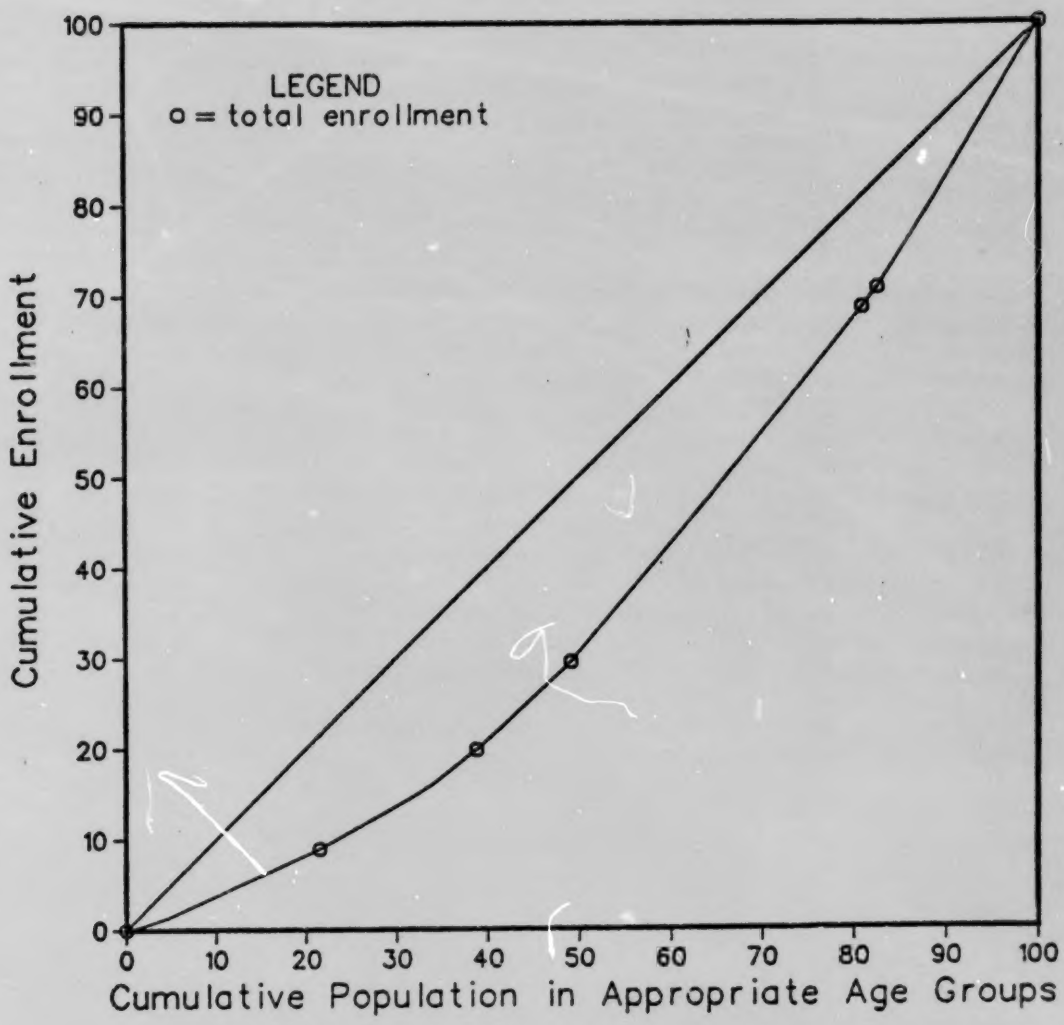


Table 12

BASIC EDUCATION DATA FOR 20 COUNTRIES IN THE EASTERN AFRICA REGION

	Enrollment	School Age Population	RI	Enrollment Rate	Primary Places Funded in Bank Group Projects Up to FY81 Amount	Loan/Credit US$m Cost
Botswana	156295	162661	1.323	96.086	0	0
Ethiopia	1379653	4200436	0.452	32.845	110000	8.1
Kenya	3698170	1968280	1.716	124.590	4550	6.0
Lesotho	226316	198254	1.572	114.155	7500	3.5
Malawi	704549	1237206	0.784	56.947	59200	8.5
Somalia	263749	585000	0.621	45.085	0	0
Sudan	1015269	2532588	0.552	40.088	12000	2.6
S. Sudan	106805	580893	0.253	18.386	9000	1.8
Swaziland	105607	111580	1.304	94.647	11500	4.4
Tanzania	2913222	3212433	1.249	90.655	24000	11.7
Uganda	1314363	1913378	0.946	68.693	0	0
Zambia	936724	999027	1.291	93.764	7580	6.0
Burundi	145234	622000	0.322	23.350	27000	9.0
Comoros	56435	72205	1.077	78.159	0	0
Madagascar	1398936	1196000	1.611	116.968	0	0
Mauritius	134800	140000	1.326	96.286	0	0
Rwanda	401521	606000	0.913	66.258	6000	8.0
Zaire	3293000	3798000	1.194	36.704	2400	2.1
Total	18250648	25136941	1.000	72.604	280730	71.7

The fiscal year (FY) of the World Bank runs from July 1 to June 30.

The bump up exercise has been applied to the Eastern Africa Region as a whole, with different hypothetical enrollment increments, ranging from a 1% (182,506 enrollment places) to a 10% increment (1,825,064 enrollment places). As displayed in Table 13, a 1% increment leads to an increase in school places in three "countries" (Ethiopia, Southern Sudan, and Burundi), whereas with a 10% increase in enrollment two additional countries (Sudan and Somalia)(12) are allocated a share of the much larger enrollment increase. Table 14 shows how the respective national enrollment quota resulting from a modest 1.5% enrollment investment (273,758 places) should be divided among the districts of the three countries concerned.

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12. Of course, the Southern Sudan hereby gets counted twice: once by itself, and a second time as part of the whole Sudan.

Table 13

ADDITIONAL ENROLLMENT ALLOCATIONS AT A GIVEN ENROLLMENT INCREASE - EASTERN AFRICA REGION

	1%	1.5%	2%	1.5%	3%	3.5%	4%	4.5%	5%	10%
Botswana	0	0	0	0	0	0	0	0	0	0
Ethiopia	30667	101605	172543	243482	311167	359467	407767	456067	504367	954875
Kenya	0	0	0	0	0	0	0	0	0	0
Lesotho	0	0	0	0	0	0	0	0	0	0
Malawi	0	0	0	0	0	0	0	0	0	0
Somalia	0	0	0	0	0	0	0	0	0	61383
Sudan	0	0	0	0	4185	33306	62427	91550	120671	3922298
S. Sudan	88233	98043	107854	117664	127024	133704	140384	147063	153743	216045
Swaziland	0	0	0	0	0	0	0	0	0	0
Tanzania	0	0	0	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	0	0	0	0	0
Zambia	0	0	0	0	0	0	0	0	0	0
Burundi	63606	74110	84615	95120	105142	112295	119447	1265901	133751	200463
Comoros	0	0	0	0	0	0	0	0	0	0
Madagascar	0	0	0	0	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0	0	0	0	0
Rwanda	0	0	0	0	0	0	0	0	0	0
Zaire	0	0	0	0	0	0	0	0	0	0
	182506	273758	365012	456266	547518	638772	730025	821279	912532	1825064

Table 14

REPRESENTATION INDICES OF TARGET DISTRICTS IN BURUNDI, ETHIOPIA AND THE SOUTHERN SUDAN, TOGETHER WITH THE TARGET INCREMENTAL ALLOCATIONS, AND RESULTING RI'S

Burundi			Ethiopia			S. Sudan		
RI Before Bump-up	District	Bump-up Allocation	RI Before Bump-up	District	Bump-up Allocation	RI Before Bump-up	District	Bump-up Allocation
0.94	Bubanza	2383	0.94	Arssi	0	4.90	Malakal	0
0.96	Cibitoke	2668	0.65	Bale	1797	1.36	Kodok	1257
1.88	Bujumbura	0	0.43	Eritrea	31493	1.48	Renk	800
1.55	Mwisale	0	0.97	Game Goffa	0	0.38	Bentiu	9517
1.31	Bururi	1647	0.58	Gojam	11124	0.50	Nasir	4311
1.07	Nakamba	1733	0.40	Gonder	29468	1.10	Sobat	643
0.88	Bukirasazi	5818	3.89	Hararge	0	0.91	Bor	3477
0.94	Geitega	5309	1.47	Illubabor	0	1.53	Pibor	72
0.67	Karuzi	5817	0.89	Keffa	0	0.90	Akobo	1284
1.06	Maramvya	3281	1.15	Shewa	0	0.31	Fangak	4971
1.28	Mwaro	1474	0.96	Sidamo	0	2.74	Raga	0
0.72	Kirundo	7939	0.51	Tigray	19275	0.29	Aweil	23610
0.70	Muyinga	6546	1.88	Wellega	0	0.30	Gogrial	14494
0.60	Kayanza	15424	0.63	Wello	8448	1.66	Wau	244
0.72	Ngozi	9852	2.99	Addis Ababa	0	0.35	Tonj	6882
1.70	Cankuzo	0				0.49	Rumbek	11320
0.97	Rutana	2182				0.41	Yirol	6233
1.05	Ruyigi	2667				2.85	Maridi	0
						2.39	Tambura	0
						2.39	Yambio	0
						5.93	Juba Town	0
						1.42	Juba Rural	1269
						0.34	Kapoeta	5396
						3.00	Torit	0
						1.65	Yei	263
TOTAL		74110			101605			98043
Minimum RI resulting from internal bump-up allocations to districts shown above:								
		0.98			0.65			0.89

43. Reducing the inequitites in the educational opportunities in Eastern Africa has important financial implications. Taking an average national primary education unit capital cost for the poorest districts in the three countries, the total financial cost of the global 1.5% enrollment increase amounts to US$30,597,000.(13) Table 15 displays the financial cost for different enrollment increases for each country and for the Eastern Africa Region as a whole.

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13. Considering that the unit capital cost in the more remote districts of a country are likely to be above the national average, this cost figure is probably underestimated by as much as 15% to 25%.

Table 15

PRIMARY EDUCATION: FINANCIAL COST AT A GIVEN ENROLLMENT INCREASE
(US$'000)

	Unit Capital Cost (US$)	1%	1.5%	2%	3%	5%	10%
Ethiopia	75	2,300	7,620	12,941	23,338	37,828	71,616
Somalia	140	-	-	-	-	-	8,594
Sudan	170	-	-	-	711	20,514	66,691
S. Sudan	170	15,000	16,667	18,335	21,594	26,136	36,728
Burundi	90	5,725	6,670	7,615	9,463	12,038	18,042
Total		23,025	30,957	38,891	55,106 (*)	96,516 (*)	201,671 (*)

(*) These totals do, to a certain extent, double count the Southern regions of the Sudan.

Conclusion

44. It is useful to compare the hypothetical allocation of new school places as determined by this study, with the actual distribution of Bank Group investments in primary education among Borrowers in the Region. The alignment between the bump-up amounts targeted by the foregoing analysis and the actual assistance to date is perhaps not as tight as could be desired (Table 12).

45. The foregoing discussion does indicate that if a deliberate Regional attack on the lowest levels of primary enrollment in Eastern Africa is to be mounted with the intention of making the biggest impact in "bumping-up" countries, then such an attack would aim at the priority countries: Sudan, Ethiopia and Burundi. Table 16 would assist in the further targeting of this assistance within those countries. The study does not promote equity as the only or even as a major goal in development. It attempts to determine where school places should be created, if equity is accepted as a major developmental goal. It also suggests when, and when not, equity should be raised as an issue, by giving a feel for what is relative equality and what is extreme inequality in the distribution of educational opportunities in the Eastern Africa countries. At a time when the promotion of equitable participation in development is going to have to compete increasingly with other lending priorities, it would be appropriate to include these findings and targets in the formulation of an overall development program in the education sector.

ANNEX

Primary school age population, enrollment, pyramid rates, pyramid indices, representation indices and gini coefficients for:

Botswana

Burundi

Ethiopia

Kenya

Lesotho

Madagascar

Malawi

Rwanda

Somalia

Sudan

Southern Sudan

Swaziland

Tanzania

Uganda

Zaire

Zambia

Botswana (1979)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Gaborone	5,135	2,956	0.576	5,112	3,548	0.694	10,248	6,504	0.635
Francistown	3,097	2,277	0.735	3,084	2,596	0.842	6,181	4,873	0.788
Lobatse	2,201	1,374	0.624	2,191	1,699	0.775	4,392	3,073	0.700
Selibe Phikw	3,016	1,588	0.527	3,003	1,812	0.603	6,018	3,400	0.565
Kgatleng	3,994	4,177	1.046	3,976	5,428	1.365	7,970	9,605	1.205
Kwenang	8,233	6,253	0.760	8,196	11,074	1.351	16,429	17,327	1.055
South East	2,527	2,572	1.018	2,516	3,361	1.336	5,042	5,933	1.177
Southern	10,352	8,601	0.831	10,306	11,832	1.148	20,658	20,433	0.989
Kgalagadi	2,119	1,940	0.915	2,110	2,336	1.107	4,229	4,276	1.011
Ghanzi	2,119	1,197	0.565	2,110	1,309	0.620	4,229	2,506	0.593
Ngahiland	7,417	5,285	0.713	7,385	5,294	0.717	14,802	10,579	0.715
North East	3,260	4,307	1.321	3,246	4,441	1.368	6,506	8,748	1.345
Central	28,040	26,929	0.960	27,916	32,109	1.150	55,955	59,038	1.055
Total	86,839	69,456	0.780	81,150	8,151	-	167,989	150,967	-

B. Pyramid Ratio/Index (grade 7)

	Mixed		Total	
District	P.Y.R	P.I	P.I. Male	P.I. Female
Gaborone	0.726	1.092	1.004	1.170
Francistown	0.759	1.141	1.036	1.241
Lobatse	0.781	1.174	0.872	1.444
Selibe Phikw	0.689	1.036	0.954	1.108
Kgatleng	0.694	1.043	0.740	1.331
Kwenang	0.550	0.828	0.570	1.018
South East	0.728	1.095	0.908	1.246
Southern	0.562	0.848	0.578	1.073
Kgalagadi	0.534	0.804	0.711	0.883
Ghanzi	0.544	0.819	0.781	0.885
Ngahiland	0.505	0.849	0.835	0.863
North East	0.788	1.185	1.043	1.328
Central	0.729	1.096	0.944	1.245
Total	-	-	0.833	1.152

C. Representation Index

District	Mixed	Total	
		Male	Female
Gaborone	0.661	0.599	0.722
Francistown	0.820	0.765	0.876
Lobatse	0.728	0.650	0.807
Selibe Phikw	0.588	0.548	0.628
Kgatleng	1.254	1.088	1.421
Kwenang	1.098	0.790	1.406
South East	1.225	1.059	1.390
Southern	1.029	0.865	1.195
Kgalagadi	1.052	0.953	1.152
Ghanzi	0.617	0.588	0.646
Ngahiland	0.744	0.742	0.746
North East	1.399	1.375	1.424
Central	1.098	1.000	1.197
Total	-	0.876	1.114

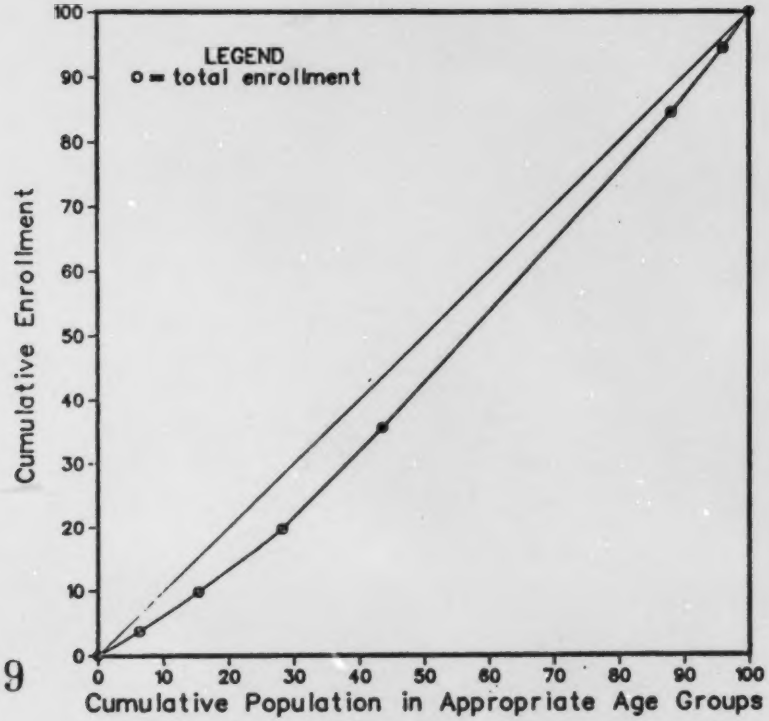
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.113	0.120	0.108	0.141

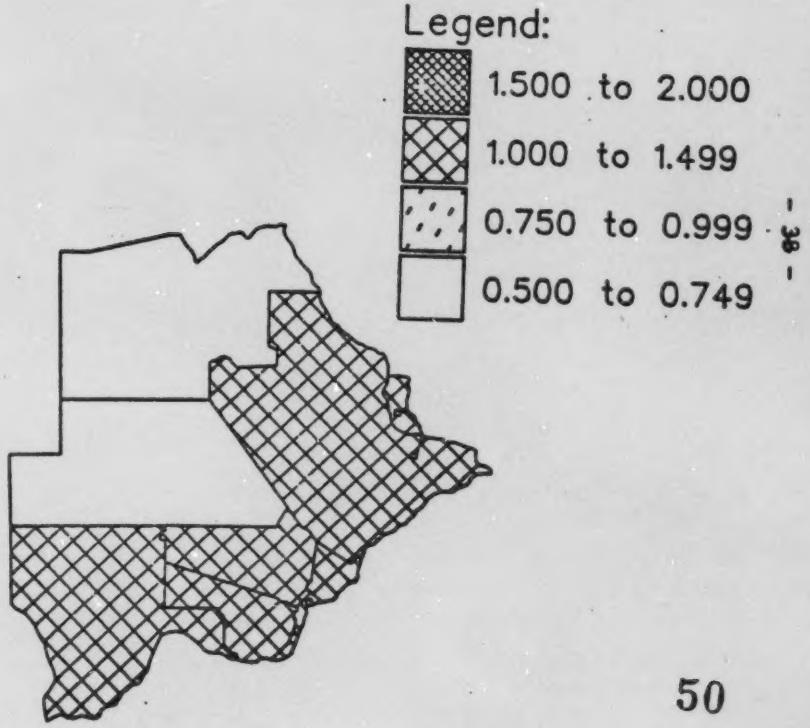
BOTSWANA

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



Burundi (1977)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Bubanza	9,472	3,080	0.325	9,514	1,456	0.153	18,986	4,536	0.239
Cibitoke	11,166	3,580	0.321	11,216	1,908	0.170	22,382	5,488	0.245
Bujumbura	15,243	7,948	0.521	15,311	6,695	0.437	30,554	14,643	0.479
Mwisale	15,619	7,737	0.495	15,689	4,611	0.294	31,308	12,348	0.394
Bururi	26,126	10,995	0.421	26,234	6,438	0.245	52,360	17,433	0.333
Makamba	9,440	3,419	0.362	9,482	1,744	0.184	18,923	5,163	0.273
Bukirasazi	20,637	5,599	0.271	20,729	3,658	0.176	41,367	9,257	0.224
Gitega	21,234	5,589	0.263	21,328	4,612	0.216	42,562	10,201	0.240
Karuzi	13,392	2,757	0.206	13,452	1,839	0.137	26,844	4,596	0.171
Muramvya	17,173	5,194	0.302	17,264	4,075	0.236	34,437	9,269	0.269
Mwaro	19,320	8,025	0.415	19,406	4,614	0.238	38,726	12,639	0.326
Kirundo	21,767	4,997	0.230	21,864	2,964	0.136	43,630	7,961	0.182
Muyinga	17,533	3,771	0.215	17,611	2,490	0.141	35,144	6,261	0.178
Kayanza	36,539	6,540	0.179	36,702	4,726	0.129	73,241	11,266	0.154
Ngozi	27,099	5,721	0.211	27,219	4,222	0.155	54,318	9,943	0.183
Cankuzo	7,622	3,803	0.499	7,656	2,820	0.368	15,277	6,623	0.434
Rutana	9,284	3,272	0.352	9,325	1,328	0.142	18,609	4,600	0.247
Ruyigi	14,961	4,767	0.319	12,521	2,581	0.206	27,482	7,348	0.267
Total	313,627	96,794	0.309	312,521	62,781	0.201	626,148	159,575	0.255

B. Pyramid Rate/Index (Grade 6)

District	Mixed		Total	
	P.Y.R	P.I	P.I. Male	P.I. Female
Bubanza	0.467	0.859	0.961	0.670
Cibitoke	0.360	0.663	0.766	0.479
Bujumbura	0.792	1.457	1.516	1.387
Mwisale	0.532	0.978	1.012	0.923
Bururi	0.658	1.210	1.335	1.021
Makamba	0.450	0.827	0.907	0.688
Bukirasazi	0.598	1.100	1.095	1.108
Gitega	0.518	0.953	0.907	1.010
Karuzi	0.448	0.824	0.789	0.877
Muramvya	0.669	1.229	1.165	1.314
Mwaro	0.607	1.116	1.216	0.956
Kirundo	0.361	0.664	0.689	0.624
Muyinga	0.473	0.869	0.856	0.891
Kayanza	0.527	0.969	1.018	0.902
Ngozi	0.495	0.911	0.995	0.802
Cankuzo	0.530	0.975	0.992	0.950
Rutana	0.663	1.218	1.353	0.936
Ruyigi	o.344	0.633	0.619	0.660

C. Representation Index

District	Mixed	Total	
		Male	Female
Bubanza	0.937	1.276	0.600
Cibitoke	0.962	1.258	0.668
Bujumbura	1.881	2.046	1.716
Mwisale	1.548	1.944	1.153
Bururi	1.306	1.651	0.963
Makamba	1.071	1.421	0.722
Bukirasazi	0.878	1.065	0.692
Gitega	0.940	1.033	0.849
Karuzi	0.672	0.808	0.536
Muramvya	1.056	1.187	0.926
Mwaro	1.281	1.630	0.933
Kirundo	0.716	0.901	0.532
Muyinga	0.699	0.844	0.555
Kayanza	0.604	0.702	0.505
Ngozi	0.718	0.828	0.609
Cankuzo	1.701	1.958	1.445
Rutana	0.970	1.383	0.559
Ruyigi	1.049	1.250	0.809

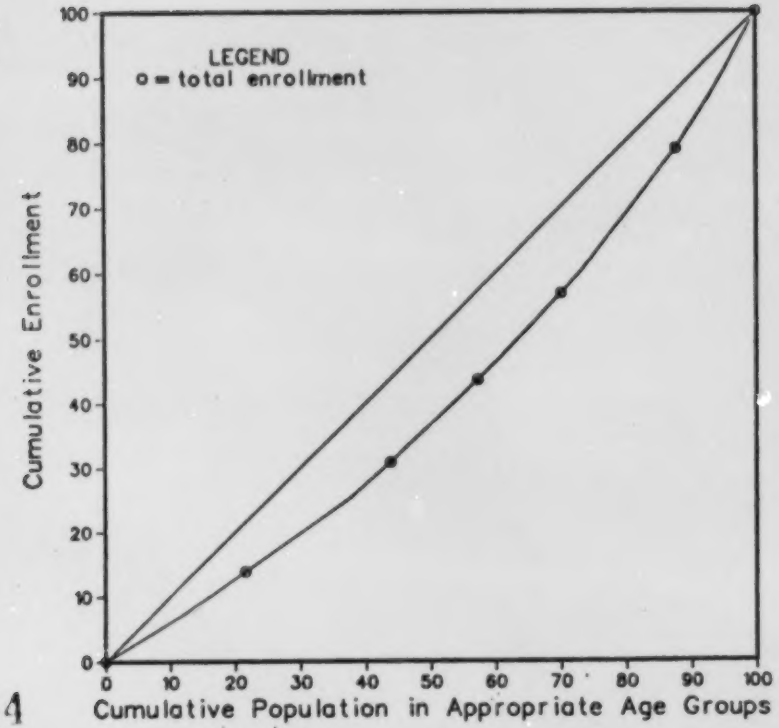
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.191	0.195	0.188	0.229

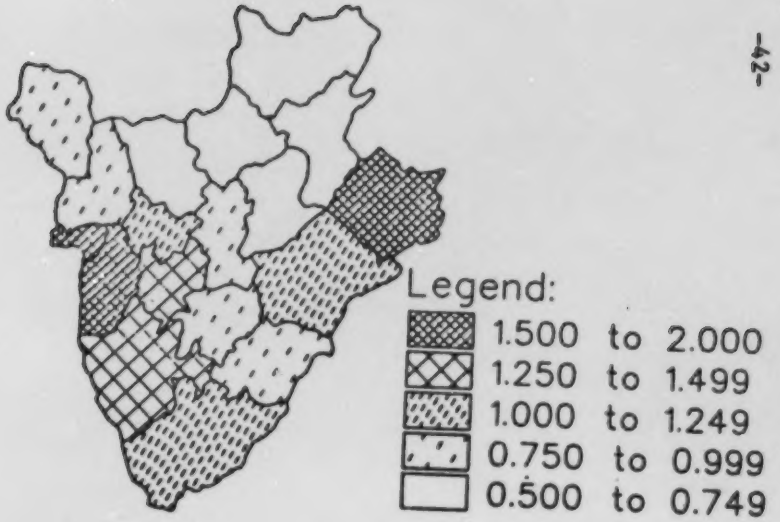
BURUNDI

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



Ethiopia (1979)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Arssi	87,055	36,825	0.423	83,641	15,853	0.190	170,696	52,678	0.309
Bale	66,595	18,828	0.283	63,983	9,249	0.145	130,578	28,077	0.215
Eritrea	184,153	26,795	0.146	176,931	24,324	0.137	361,084	51,119	0.142
Game Goffa	75,908	36,204	0.477	72,930	11,242	0.154	148,838	47,446	0.319
Gojam	154,637	37,719	0.244	148,572	20,528	0.138	303,209	58,247	0.192
Gondar	155,805	22,790	0.146	149,694	17,637	0.118	305,499	40,427	0.132
Hararge	23,710	36,902	1.556	22,780	22,164	0.973	46,490	59,066	1.271
Illubabor	61,322	43,071	0.702	58,917	14,975	0.254	120,239	58,046	0.483
Keffa	122,553	49,007	0.400	117,747	21,031	0.179	240,300	70,038	0.291
Shewa	391,548	220,711	0.564	376,192	69,464	0.185	767,740	290,175	0.378
Sidamo	212,988	102,982	0.484	204,635	28,112	0.137	417,623	131,094	0.314
Tigray	163,941	30,609	0.187	157,512	23,661	0.150	321,453	54,270	0.169
Wellega	153,220	136,388	0.890	147,213	48,747	0.331	300,433	185,135	0.616
Wello	198,098	51,054	0.258	190,330	29,366	0.154	388,428	80,420	0.207
Addis Ababa	90,526	86,914	0.960	87,300	86,501	0.991	177,826	173,415	0.975
Total	2,142,059	936,799	0.437	2,058,377	442,854	0.215	4,200,436	1,379,653	0.328

B. Pyramid Ratio/Index (Grade 6)

District	Mixed		Total	
	P.Y.R	P.I	P.I. Male	P.I. Female
Arssi	0.255	1.164	1.125	0.988
Bale	0.095	0.434	0.739	0.685
Eritrea	0.299	1.365	1.178	1.128
Game Goffa	0.110	0.500	0.938	0.830
Gojam	0.209	1.663	0.853	0.909
Gondar	0.365	0.904	1.188	1.063
Hararge	0.198	0.401	0.829	1.037
Illubabor	0.088	0.502	0.778	0.650
Keffa	0.110	1.029	0.764	0.771
Shewa	0.226	0.761	1.056	1.072
Sidamo	0.167	1.014	0.975	0.930
Tigray	0.222	0.792	0.983	0.909
Wellega	0.174	0.899	1.050	0.937
Wello	0.197	2.415	0.958	0.883
Addis Ababa	0.529	-	1.402	1.444
Total	-	-	0.999	1.002

C. Representation Index

District	Mixed	Total	
		Male	Female
Arssi	0.940	1.288	0.577
Bale	0.655	0.861	0.440
Eritrea	0.431	0.443	0.419
Game Goffa	0.971	1.452	0.469
Gojam	0.585	0.743	0.421
Gondar	0.403	0.445	0.359
Hararge	3.868	4.739	2.962
Illubabor	1.470	2.138	0.774
Keffa	0.887	1.217	0.544
Shewa	1.151	1.716	0.562
Sidamo	0.956	1.472	0.418
Tigray	0.514	0.568	0.457
Wellega	1.876	2.710	1.008
Wello	0.630	0.785	0.470
Addis Ababa	2.975	2.923	3.017
Total	-	1.331	0.655

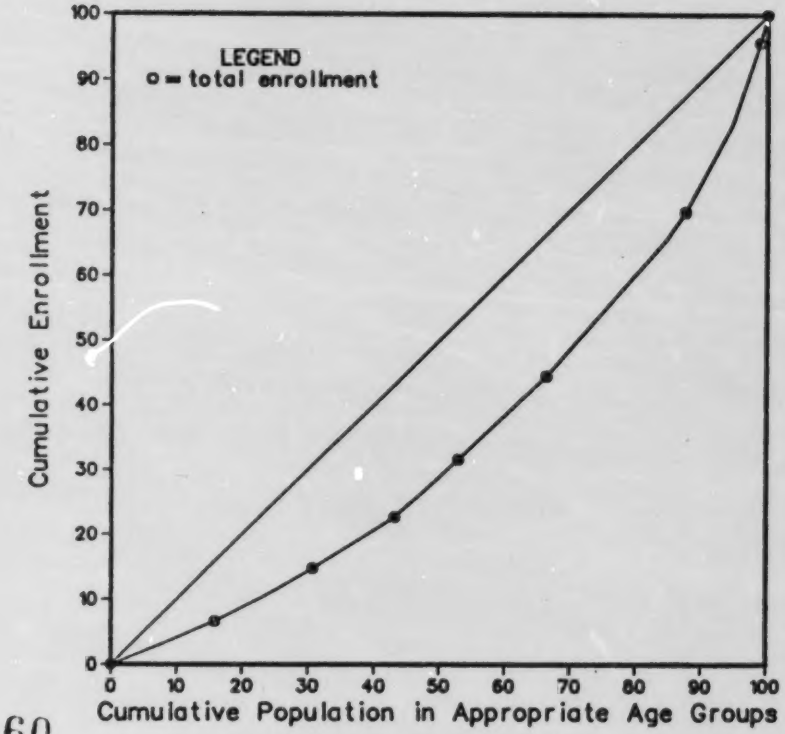
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.322	0.295	0.310	0.382

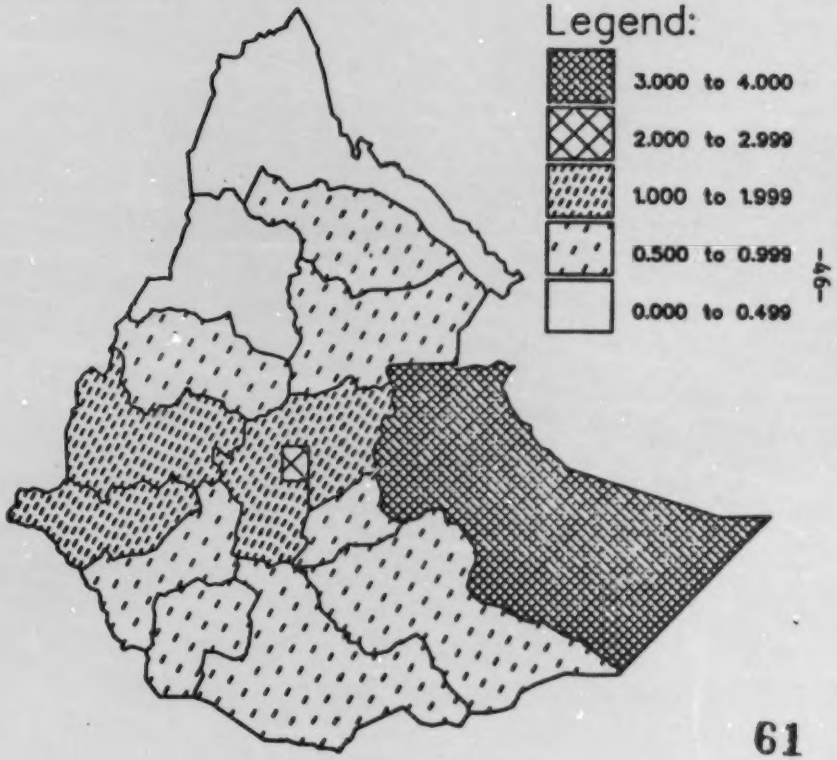
ETHIOPIA

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



Kenya (1979)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Taita/Taveta	15,751	20,286	1.288	14,954	19,516	1.305	30,705	39,802	1.296
Kilifi	40,006	46,418	1.160	38,950	21,346	0.548	78,955	67,764	0.858
Tana River	6,952	6,096	0.877	6,635	3,616	0.545	13,586	9,712	0.715
Lamu	2,354	4,239	1.801	2,347	2,909	1.239	4,701	7,148	1.520
Kwale	25,587	28,176	1.101	24,418	16,748	0.686	50,005	44,924	0.898
Mombasa	26,374	22,058	0.836	25,962	18,920	0.729	52,335	40,978	0.783
Nyandarua	23,670	34,648	1.464	25,341	33,492	1.322	49,011	68,140	1.390
Nyeri	51,958	76,254	1.468	55,615	76,676	1.379	107,573	152,930	1.422
Kirinyaga	27,832	40,240	1.446	29,791	39,374	1.322	57,624	79,614	1.382
Muranga	58,916	90,509	1.536	63,071	88,973	1.411	121,987	179,482	1.471
Kiambu	62,407	91,924	1.473	66,593	90,895	1.365	129,000	182,819	1.417
Machakos	92,231	151,098	1.638	98,335	146,804	1.493	190,566	297,902	1.563
Kitui	40,396	64,612	1.599	42,981	54,726	1.273	83,377	119,338	1.431
Embu	24,995	36,231	1.450	26,594	35,591	1.338	51,589	71,822	1.392
Meru	78,871	106,644	1.352	82,909	100,473	1.212	161,780	207,117	1.280
Marsabit	5,615	3,696	0.658	5,987	1,659	0.277	11,602	5,355	0.462
Isiolo	3,388	3,226	0.952	3,612	1,894	0.524	7,000	5,120	0.731
Nairobi	60,853	48,391	0.795	41,429	45,811	1.106	102,281	94,202	0.921
Nakuru	42,430	66,555	1.569	39,968	61,341	1.535	82,398	127,896	1.552
Kericho	80,833	89,559	1.108	76,125	78,977	1.037	156,958	168,536	1.074
Nandi	29,155	39,638	1.360	27,463	36,529	1.330	56,618	76,167	1.345
Laikipia	8,239	15,636	1.898	7,759	13,914	1.793	15,997	29,550	1.847
Kajiado	11,845	13,211	1.115	11,153	9,978	0.895	22,997	23,189	1.008
Narok	15,236	15,178	0.996	14,348	8,516	0.594	29,584	23,694	0.801
Baringo	20,593	26,041	1.265	19,394	22,638	0.167	39,987	48,679	1.217
Elgeyo Marakwet	21,317	21,883	1.027	20,075	19,687	0.981	41,393	41,570	1.004
Uasin Gishu	28,942	36,008	1.244	27,262	34,429	1.263	56,204	70,437	1.253
Turkana	17,918	3,160	0.176	16,875	1,184	0.070	34,793	4,344	0.125
Samburu	8,969	4,427	0.494	8,447	1,789	0.212	17,416	6,216	0.357
Trans-Nzoia	17,932	35,248	1.966	16,888	32,071	1.899	34,820	67,319	1.933
West Pokot	10,098	11,901	1.179	9,510	6,718	0.706	19,607	18,619	0.950
Busia	26,932	44,225	1.642	28,832	37,457	1.299	55,764	81,682	1.465
Bungoma	50,987	78,410	1.538	54,576	72,972	1.337	105,563	151,382	1.434
Kakamega	109,341	157,915	1.444	117,038	148,967	1.273	226,380	306,882	1.356
Kisumu	55,197	71,004	1.286	56,774	60,626	1.068	111,971	131,630	1.176
Gusii	101,428	139,467	1.375	103,316	132,016	1.278	204,744	271,483	1.326
South Nyanza	93,256	124,810	1.338	95,904	95,754	0.998	189,160	220,564	1.166
Siaya	49,889	76,498	1.533	51,305	67,074	1.307	101,194	143,572	1.419
Garissa	9,234	2,203	0.239	7,742	925	0.119	16,976	3,128	0.184
Wajir	11,971	2,838	0.237	10,034	1,261	0.126	22,005	4,099	0.186
Mandera	12,623	2,723	0.216	10,581	640	0.060	23,204	3,363	0.145
Total	1,482,521	1,953,284	1.317	1,486,893	1,744,886	1.174	2,969,414	3,698,170	1.245

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B. Pyramid Ratio/Index (grade 7)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Taita/Taveta	0.444	1.542	1.599	1.482
Kilifi	0.163	0.566	0.653	0.408
Tana River	0.219	0.761	0.973	0.468
Lamu	0.204	0.708	0.905	0.478
Kwale	0.187	0.648	0.739	0.511
Mombasa	0.700	2.430	2.776	2.068
Nyandarua	0.564	1.959	2.074	1.840
Nyeri	0.562	1.950	1.893	2.012
Kirinyaga	0.493	1.711	1.782	1.637
Muranga	0.423	1.469	1.496	1.439
Kiambu	0.549	1.906	1.949	1.862
Machakos	0.344	1.194	1.352	1.035
Kitui	0.243	0.843	0.973	0.699
Embu	0.446	1.549	1.592	1.504
Meru	0.272	0.943	0.947	0.938
Marsabit	0.259	0.900	1.096	0.528
Isiolo	0.339	1.175	1.412	0.855
Nairobi	0.676	2.347	2.388	2.305
Nakuru	0.303	1.053	1.201	0.903
Kericho	0.246	0.855	1.094	0.605
Nandi	0.175	0.607	0.726	0.483
Laikipia	0.338	1.171	1.282	1.053
Kajiado	0.279	0.969	0.900	1.069
Narok	0.191	0.662	0.773	0.493
Baringo	0.232	0.805	0.914	0.685
Elgeyo Marakwet	0.216	0.749	0.835	0.650
Uasin Gishu	0.284	0.985	1.123	0.844
Turkana	0.186	0.644	0.689	0.522
Samburu	0.167	0.578	0.564	0.617
Trans-Nzoia	0.193	0.671	0.818	0.523
West Pokot	0.182	0.631	0.699	0.516
Busia	0.154	0.534	0.660	0.404
Bungoma	0.273	0.949	1.118	0.780
kakamega	0.245	0.851	0.900	0.800
Kisumu	0.260	0.903	1.129	0.663
Gusii	0.205	0.713	0.836	0.589
South Nyanza	0.178	0.617	0.802	0.403
Siaya	0.225	0.781	0.962	0.591
Garissa	0.345	1.198	1.343	0.904
Wajir	0.341	1.182	1.385	0.786
Mandera	0.201	0.699	0.780	0.425
Total	-	-	1.108	0.883

C. Representation Index

District	Mixed	Total	
		Male	Female
Taita/Taveta	1.041	1.034	1.048
Kilifi	0.689	0.932	0.440
Tana River	0.574	0.704	0.438
Lamu	1.221	1.446	0.995
Kwale	0.721	0.884	0.551
Mombasa	0.629	0.672	0.585
Nyandarua	1.116	1.175	1.061
Nyeri	1.141	1.178	1.107
Kirinyaga	1.109	1.161	1.061
Muranga	1.181	1.234	1.133
Kiambu	1.138	1.183	1.096
Machakos	1.255	1.315	1.199
Kitui	1.149	1.284	1.022
Embu	1.118	1.164	1.075
Meru	1.028	1.086	0.973
Marsabit	0.371	0.528	0.223
Isiolo	0.587	0.765	0.421
Nairobi	0.740	0.639	0.888
Nakuru	1.246	1.259	1.232
Kericho	0.862	0.890	0.833
Nandi	1.080	1.092	1.068
Laikipia	1.483	1.524	1.440
Kajiado	0.810	0.896	0.718
Narok	0.643	0.800	0.477
Baringo	0.977	1.015	0.937
Elgeyo Marakwet	0.806	0.824	0.787
Uasin Gishu	1.006	0.999	1.014
Turkana	0.100	0.142	0.056
Samburu	0.287	0.396	0.170
Trans-Nzoia	1.552	1.578	1.525
West Pokot	0.762	0.946	1.567
Busia	1.176	1.319	1.043
Bungoma	1.151	1.235	1.074
Kakamega	1.088	1.160	1.022
Kisumu	0.944	1.033	0.857
Gusii	1.065	1.104	1.026
South Nyanza	0.936	1.075	0.802
Siaya	1.139	1.231	1.050
Garissa	0.148	0.192	0.096
Wajir	0.150	0.190	0.101
Mandera	0.116	0.173	0.049
Total	-	1.058	0.942

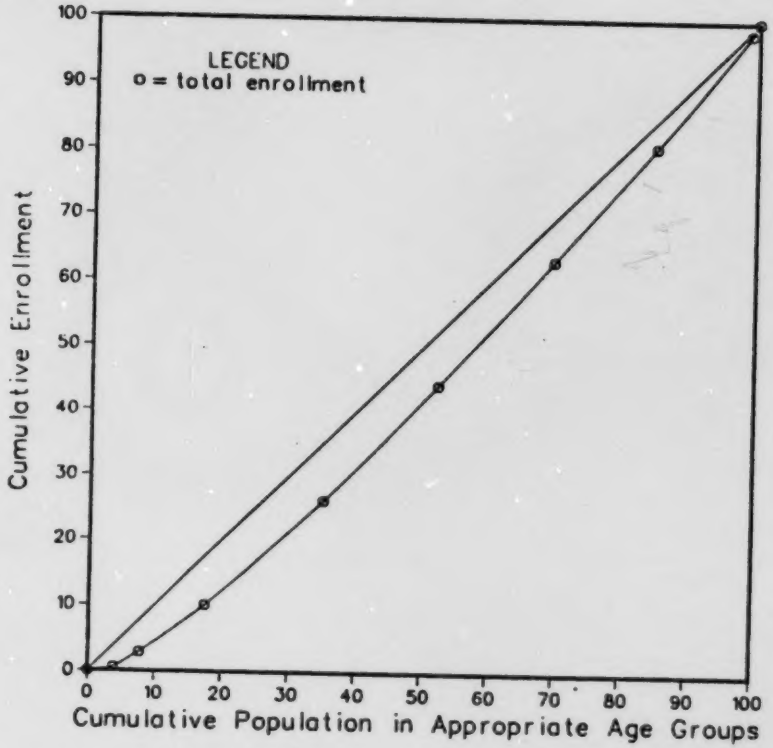
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.121	0.136	0.124	0.134

KENYA

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



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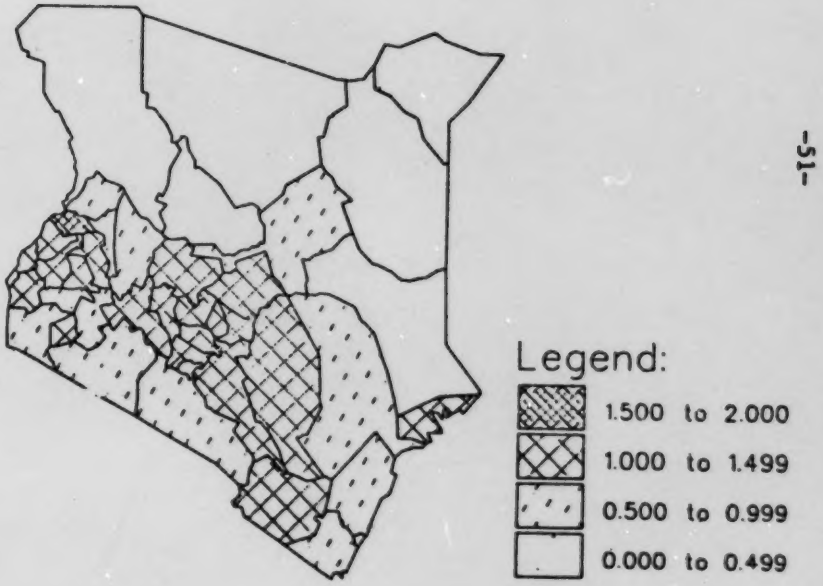
RI by District



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Lesotho (1979)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Butha-Buthe	6,115	6,737	1.102	6,313	8,458	1.340	12,428	15,195	1.223
Leribe	16,284	18,234	1.120	16,970	22,534	1.328	33,253	40.768	1.226
Berea	11,878	13,046	1.098	12,025	16,669	1.386	23,903	29,715	1.243
Maseru	20,210	20,832	1.031	21,295	29,750	1.397	41,505	50,582	1.219
Mafeteng	12,300	10,917	0.888	12,553	17,334	1.381	24,853	28,251	1.137
Mohaleshoek	10,802	8,173	0.757	11,144	14,529	1.304	21,946	22,702	1.034
Quthing	6,882	5,331	0.775	7,359	9,150	1.243	14,241	14,481	1.017
Qacha'Snek	6,093	5,135	0.850	6,271	8.079	1.288	12,310	13,214	1.073
Mokhotlong	5,830	3,816	0.655	6,002	7,592	1.265	11,832	11,408	0.964
Total	97,313	92,221	0.948	100,941	134,095	1.328	198,254	226,316	1.142

B. Pyramid Ratio/Index (grade 7)

District	Male		Female	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Butha-Buthe	0.386	1.198	0.962	1.332
Leribe	0.380	1.179	0.945	1.208
Berea	0.367	1.140	0.932	1.239
Maseru	0.365	1.133	0.897	1.135
Mafeteng	0.353	1.095	0.817	1.157
Mohaleshoek	0.241	0.747	0.773	1.033
Quthing	0.218	0.675	0.793	0.968
Qacha'Snek	0.200	0.619	0.731	0.946
Mokhotlong	0.199	0.617	0.703	0.950
Total	-	-	0.865	1.120

C. Representation Index

District	Mixed	Total	
		Male	Female
Butha-Buthe	1.060	0.955	1.162
Leribe	1.063	0.971	1.152
Berea	1.078	0.953	1.202
Maseru	1.057	0.894	1.212
Mafeteng	0.986	0.770	1.198
Mohaleshoek	0.897	0.656	1.131
Quthing	0.882	0.672	1.078
Qacha'Snek	0.931	0.737	1.117
Mokhotlong	0.836	0.568	1.097
Total	-	0.830	1.164

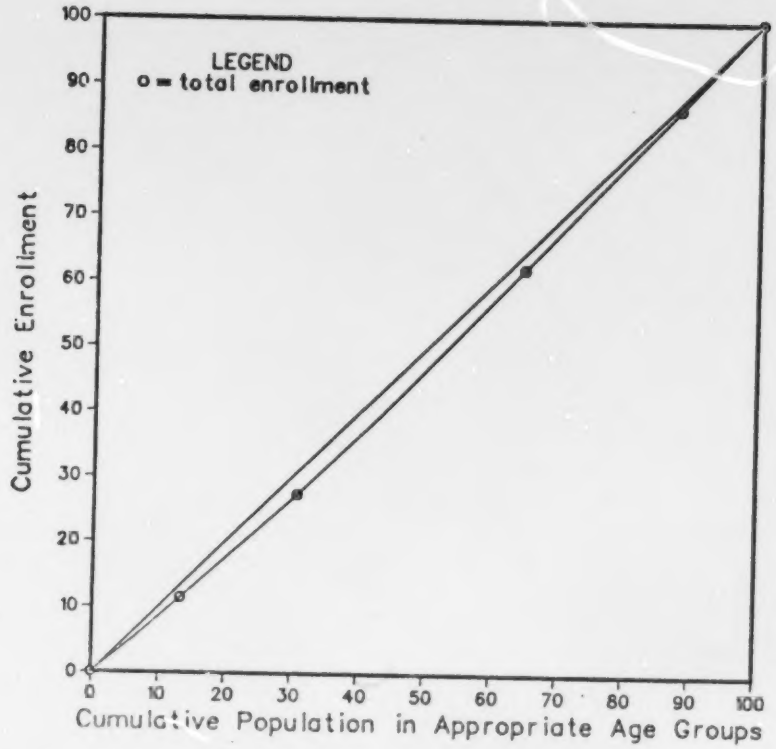
D. Gini Coefficient

Male	Female	Mixed	Total
0.088	0.021	0.043	0.107

LESOTHO

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



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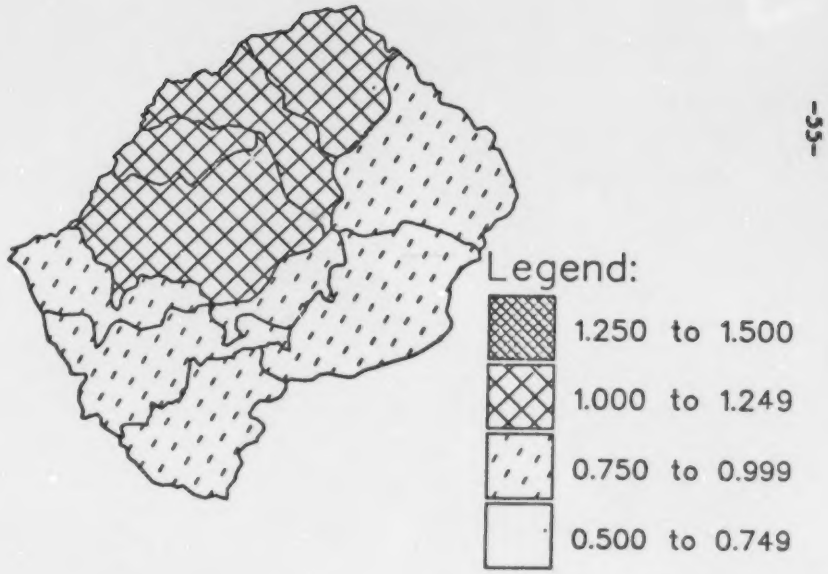
RI by District



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Madagascar (1976)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Antanarivo	158,426	204,932	1.389	161,627	184,673	1.227	320,053	389,605	1.307
Diego Suarez	41,124	52,499	0.659	41,955	47,309	0.582	83,079	99,808	0.620
Fianaramtsoa	127,767	145,140	0.659	130,349	130,791	0.582	258,116	275,931	0.620
Majunga	57,846	64,276	0.446	59,014	57,921	0.394	116,860	122,197	0.420
Tamatave	83,982	114,728	0.369	85,678	103,387	0.326	169,660	218,115	0.348
Tulear	72,950	52,169	0.715	74,424	47,011	0.632	147,374	99,180	0.673
Total	542,095	633,744	1.169	553,047	571,092	1.033	1,095,142	1,204,836	1.10

B. Pyramid Rate/Index (Grade 5)

District	Mixed		Total	
	P.Y.R	P.I	P.I Male	P.I. Female
Antanarivo	0.358	1.480	1.143	1.143
Diego Suarez	0.218	0.901	0.991	0.991
Fianaramtsoa	0.170	0.703	0.898	0.898
Majunga	0.210	0.868	0.955	0.955
Tamatave	0.194	0.801	0.980	0.980
Tulear	0.239	0.987	0.942	0.942

C. Representation Index

District	Mixed	Total	
		Male	Female
Antanarivo	1.942	1.176	1.039
Diego Suarez	0.921	1.160	1.025
Fianaramtsoa	0.922	1.033	0.912
Majunga	0.624	1.010	0.892
Tamatave	0.516	1.242	1.097
Tulear	1.000	0.650	0.574

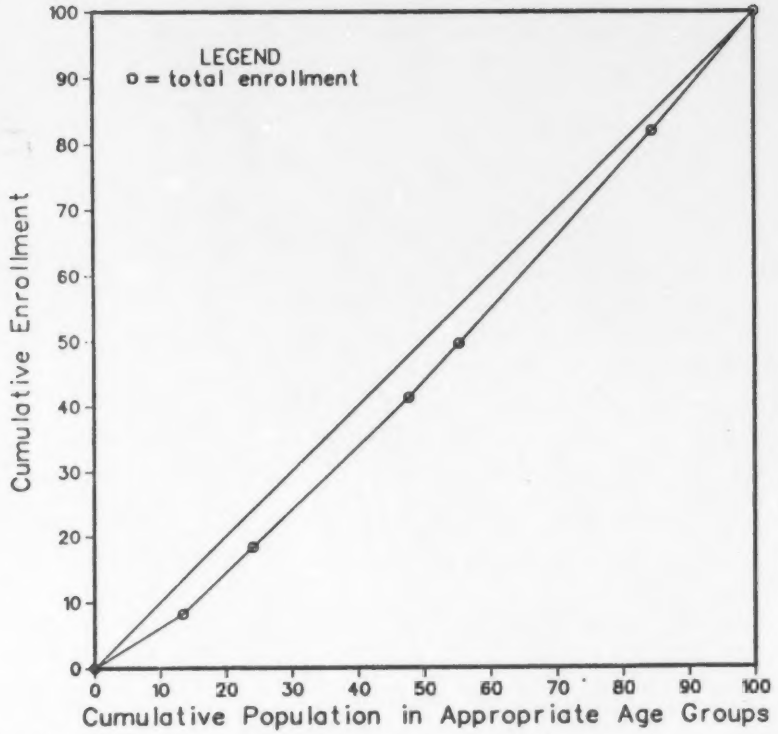
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.085	0.085	0.085	0.096

MADAGASCAR

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



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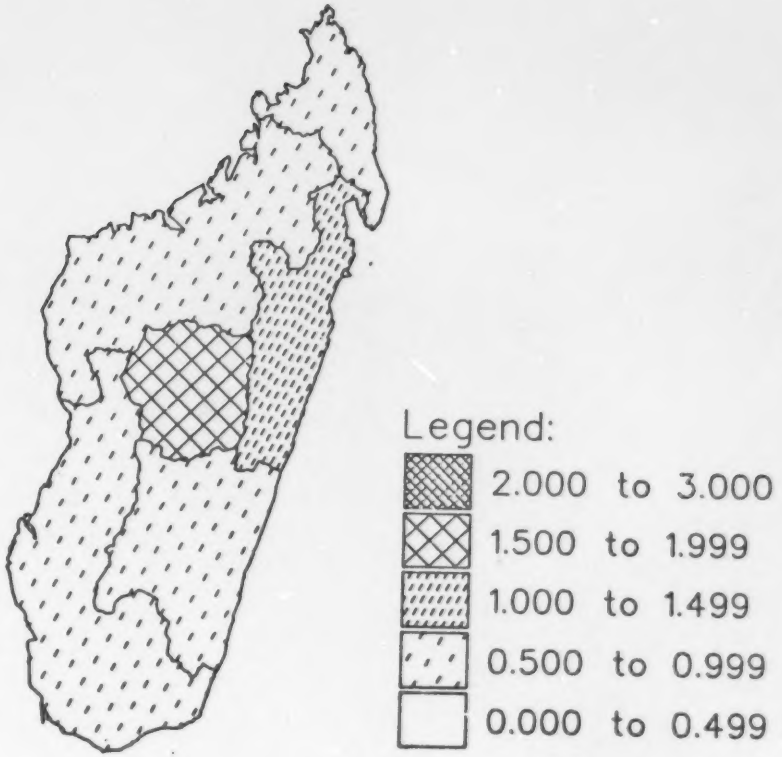
RI by District



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Malawi (1979)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Chitipa	7,447	10,670	1.433	8,367	7,547	0.902	15,813	18,217	1.152
Karonga	10,896	12,981	1.191	12,208	9,275	0.760	23,103	22,256	0.963
Rumphi	11,479	9,528	0.830	12,453	7,858	0.631	23,932	17,386	0.726
Nkhata Bay	6,545	11,070	1.691	7,516	7,820	1.040	14,060	18,890	1.343
Mzimba	29,882	36,482	1.221	33,951	26,706	0.787	63,830	63,188	0.990
Kasungu	23,631	15,198	0.643	21,438	9,866	0.460	45,079	25,064	0.556
Nkhota Kota	10,270	8,099	0.789	10,927	4,584	0.419	21,198	12,683	0.598
Ntohisi	9,098	5,925	0.651	9,924	4,181	0.421	19,022	10,106	0.531
Dowa	26,970	16,999	0.630	28,389	12,871	0.453	55,361	29,870	0.540
Salima	14,066	6,712	0.477	14,465	4,054	0.280	28,532	10,766	0.377
Lilongwe	76,651	46,786	0.610	76,069	34,958	0.460	152,737	81,744	0.535
Mchinji	19,172	9,330	0.487	17,275	5,983	0.346	36,455	15,313	0.420
Dedza	30,466	14,218	0.467	33,877	9,047	0.267	64,341	23,265	0.362
Ntchewu	24,511	15,425	0.629	26,902	9,915	0.369	51,412	25,340	0.493
Mangochi	29,569	11,511	0.389	35,334	5,572	0.158	64,896	17,083	0.263
Machinga	35,546	15,996	0.450	42,014	8,435	0.201	77,552	24,431	0.315
Zomba	35,552	22,448	0.631	41,987	13,294	0.317	77,531	35,742	0.461
Chiradzulu	16,830	16,323	0.970	19,285	11,950	0.620	36,112	28,273	0.783
Blantyre	49,248	49,000	0.995	45,872	40,874	0.891	95,138	89,874	0.945
Mwanza	8,371	6,012	0.718	8,331	3,948	0.474	16,704	9,960	0.596
Thyolo	36,659	23,874	0.651	3,887	16,801	4.323	75,477	49,675	0.539
Mulanje	49,512	33,693	0.681	59,163	21,291	0.360	108,662	54,984	0.506
Chikwawa	22,582	13,156	0.583	23,380	5,208	0.223	45,965	18,364	0.400
Nsanje	11,339	8,038	0.709	12,975	3,037	0.234	24,312	11,075	0.456
Total	590,290	419,474	0.703	640,916	288,075	0.445	1,237,206	704,549	0.569

B. Pyramid Ratio/Index (grade 8)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Chitipa	0.463	1.715	2.551	0.816
Karonga	0.425	1.575	2.364	0.736
Rumphi	0.597	2.210	2.948	1.429
Nkhata Bay	0.433	1.602	2.521	0.640
Nzimba	0.518	1.919	2.671	1.100
Kasungu	0.338	1.253	1.859	0.545
Nkhota-Kota	0.243	0.900	1.284	0.386
Ntohisi	0.317	1.176	1.793	0.490
Dowa	0.163	0.605	0.907	0.297
Salima	0.263	0.976	1.256	0.546
Lilongwe	0.208	0.769	1.040	0.459
Mchinji	0.218	0.806	1.104	0.453
Dedza	0.178	0.658	0.831	0.418
Ntchewu	0.269	0.996	1.397	0.507
Mangochi	0.207	0.767	0.905	0.534
Machinga	0.315	0.167	1.527	0.613
Zomba	0.383	1.419	1.641	1.033
Chiradzulu	0.247	0.916	1.306	0.476
Blantyre	0.257	0.952	1.233	0.681
Mwanza	0.246	0.911	1.139	0.594
Thyolo	0.165	0.610	0.847	0.329
Mulanje	0.187	0.691	0.945	0.372
Chikwawa	0.246	0.912	1.129	0.468
Nsanje	0.123	0.455	0.570	0.226
Total	-	-	1.351	0.577

C. Representation Index

District	Mixed	Total	
		Male	Female
Chitipa	2.023	2.516	1.584
Karonga	1.692	2.092	1.334
Rumphi	1.276	1.458	1.108
Nkhata Bay	2.359	2.970	1.827
Nzimba	1.738	2.144	1.381
Kasungu	0.976	1.129	0.808
Nkhota-Kota	1.051	1.385	0.737
Ntohisi	0.933	1.144	0.740
Dowa	0.947	1.107	0.796
Salima	0.663	0.838	0.492
Lilongwe	0.940	1.072	0.807
Mchinji	0.738	0.855	0.608
Dedza	0.635	0.820	0.469
Ntchewu	0.866	1.105	0.647
Mangochi	0.462	0.684	0.277
Machinga	0.553	0.790	0.353
Zomba	0.810	1.109	0.556
Chiradzulu	1.375	1.703	1.088
Blantyre	1.659	1.747	1.565
Nwanza	1.047	1.261	0.832
Thyolo	0.946	1.144	0.760
Mulanje	0.889	1.195	0.632
Chikwawa	0.702	1.023	0.391
Nsanje	0.800	1.245	0.411
Total	-	1.235	0.781

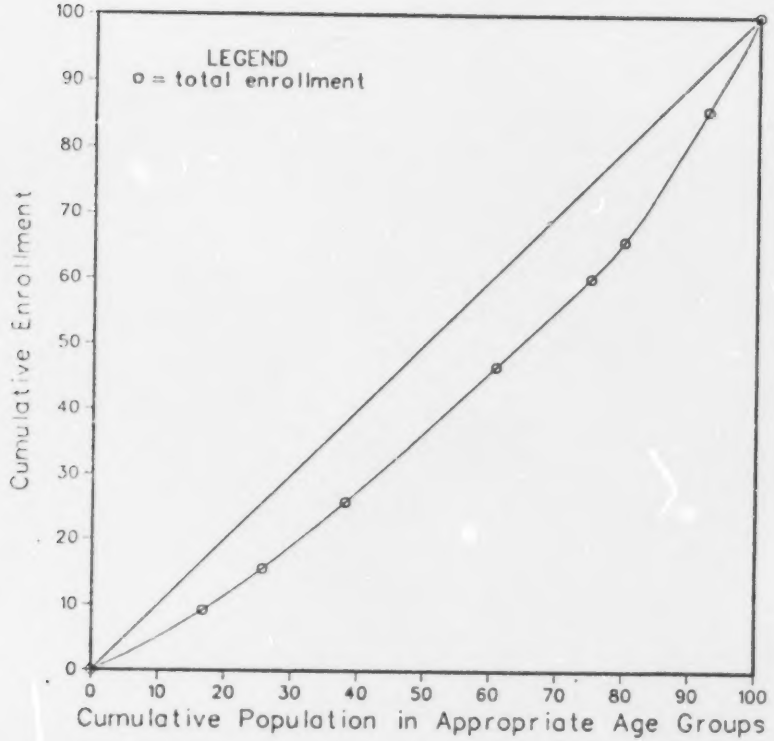
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.178	0.305	0.207	0.252

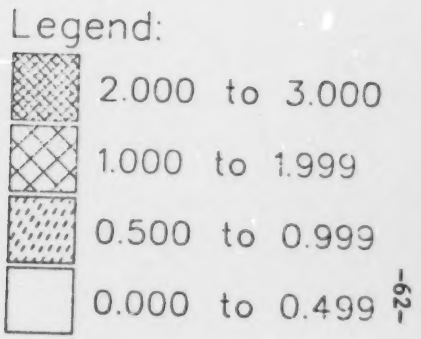
MALAWI

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



Rwanda (1980)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Butare	67,483	35,631	0.528	67,972	36,036	0.530	135,455	71,667	0.529
Byumba	47,054	35,206	0.748	47,790	29,584	0.619	94,844	64,790	0.683
Gyangugu	33,528	20,724	0.618	34,034	19,390	0.570	67,562	40,114	0.594
Gikongoro	40,006	23,557	0.589	40,269	21,673	0.538	80,275	45,230	0.563
Gisenyi	48,613	30,495	0.627	48,932	23,849	0.487	97,545	54,344	0.557
Gitarama	61,098	42,070	0.689	61,500	43,007	0.699	122,598	85,077	0.694
Kibungo	32,299	24,461	0.757	32,653	23,363	0.715	64,952	47,824	0.736
Kibuye	29,746	24,751	0.832	29,941	22,557	0.753	59,687	47,308	0.793
Kigali	56,938	45,148	0.793	57,357	43,299	0.755	114,295	88,447	0.774
Ruhengeri	56,135	35,767	0.637	55,550	26,911	0.484	111,685	62,678	0.561
Total	472,900	317,810	0.672	475,998	289,669	0.609	948,898	607,479	0.64

B. Pyramid Rate/Index (Grade 6)

District	Mixed		Total	
	PYR	PI	PI Male	PI Female
Butare	0.337	1.079	0.988	1.173
Byumba	0.289	0.924	1.017	0.821
Gyangugu	0.348	1.113	1.119	1.107
Gikongoro	0.295	0.943	0.974	0.912
Gisenyi	0.339	1.084	1.256	0.895
Gitarama	0.345	1.104	1.081	1.126
Kibungo	0.279	0.894	0.927	0.861
Kibuye	0.287	0.920	0.963	0.876
Kigali	0.301	0.963	0.982	0.944
Ruhengeri	0.301	0.964	1.094	0.811

C. Representation Index

District	Mixed	Total	
		Male	Female
Butare	0.826	0.825	0.828
Byumba	1.067	1.169	0.967
Gyangugu	0.927	0.966	0.890
Gikongoro	0.880	0.920	0.841
Gisenyi	0.870	0.980	0.761
Gitarama	1.084	1.076	1.092
Kibungo	1.150	1.183	1.118
Kibuye	1.238	1.300	1.177
Kigali	1.209	1.239	1.179
Ruhengeri	0.877	0.995	0.757

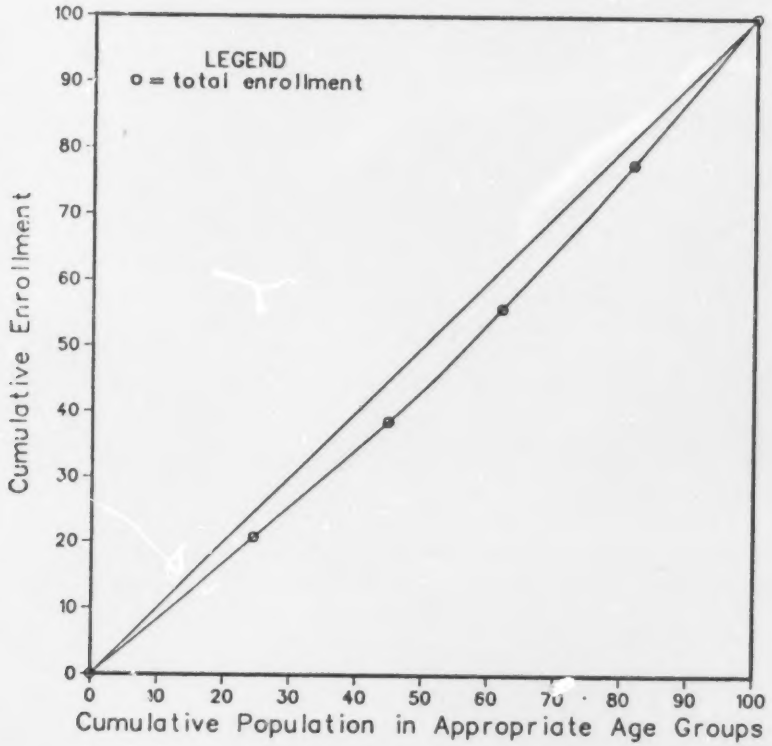
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.078	0.094	0.081	0.092

RWANDA

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



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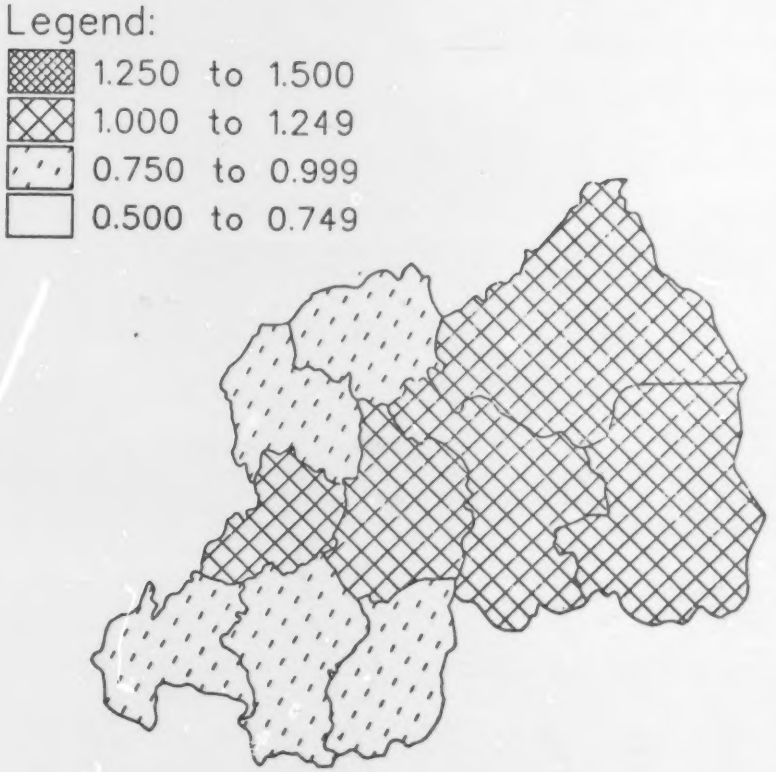
RI by District



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Somalia (1979)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
W. Galbeed	38,502	18,531	0.481	35,798	6,897	0.179	74,300	25,428	0.342
Togodheer	22,992	5,446	0.236	20,308	1,972	0.086	43,300	7,418	0.171
Sanaag	12,130	2,620	0.215	12,470	1,009	0.083	24,600	3,629	0.147
Bari	13,648	3,039	0.222	12,152	1,116	0.082	25,800	4,155	0.161
Nugaal	7,437	3,158	0.424	7,263	1,384	0.186	14,700	4,542	0.308
Mudug	18,989	2,517	0.132	16,511	1,346	0.071	35,500	3,863	0.108
Galgaduud	15,805	3,278	0.207	14,795	1,824	0.115	30,600	5,102	0.166
Hiiraan	12,718	8,840	0.695	11,382	3,864	0.304	24,600	12,704	0.516
Sh. Dhexe	20,719	9,383	0.452	18,881	4,744	0.229	39,600	14,127	0.356
Banaadir/Mog	31,532	42,790	0.357	30,368	34,017	1.079	61,900	76,807	1.240
Sh. Hoose	34,395	32,081	0.932	32,705	18,959	0.551	67,100	51,040	0.760
Bay	26,737	7,957	0.297	23,863	3,750	0.140	50,600	11,707	0.231
Bakool	9,247	2,331	0.252	8,253	1,074	0.116	17,500	3,405	0.194
Gedo	18,404	4,879	0.265	16,996	1,842	0.100	35,400	6,721	0.189
Juba	20,935	21,769	1.030	18,565	11,332	0.541	39,500	33,101	0.838
Total	304,191	168,619	0.554	280,809	95,130	0.339	58,500	263,749	0.451

B. Pyramid Ratio/Index (Grade 6)

	Mixed		Total	
District	P.Y.R	P.I	P.I. Male	P.I. Female
W.Galbeed	0.166	0.748	0.588	0.614
Togodheer	0.282	1.270	1.351	0.959
Sanaag	0.264	1.188	1.266	0.941
Bari	0.379	1.707	1.152	0.848
Nugaal	0.240	1.082	1.502	1.098
Mudug	0.575	2.586	1.832	1.403
Galgaduud	0.268	1.205	1.476	1.200
Hiiraan	0.143	0.642	0.669	0.631
Sh. Dhexe	0.099	0.446	1.025	0.848
Banaadir/Mog	0.516	2.322	1.476	1.320
Sh. Hoose	0.079	0.356	0.977	0.834
Bay	0.165	0.744	0.873	0.750
Bakool	0.194	0.874	1.056	1.227
Gedo	0.064	0.287	0.592	0.567
Juba	0.149	0.670	1.432	1.223
Total	-	-	1.023	0.962

C. Representation Index

District	Mixed	Total	
		Male	Female
W. Galbeed	0.759	1.068	0.427
Togodheer	0.380	0.525	0.215
Sanaag	0.327	0.479	0.179
Bari	0.357	0.494	0.204
Nugaal	0.685	0.942	0.423
Mudug	0.241	0.294	0.181
Galgaduud	0.370	0.460	0.273
Hiiraan	1.145	1.542	0.721
Sh. Dhexe	0.791	1.004	0.557
Banaadir/Mog	2.752	3.010	2.485
Sh. Hoose	1.687	2.069	1.286
Bay	0.513	0.660	0.349
Bakool	0.432	0.559	0.289
Gedo	0.421	0.588	0.240
Juba	1.859	2.306	1.354
Total	-	1.229	0.754

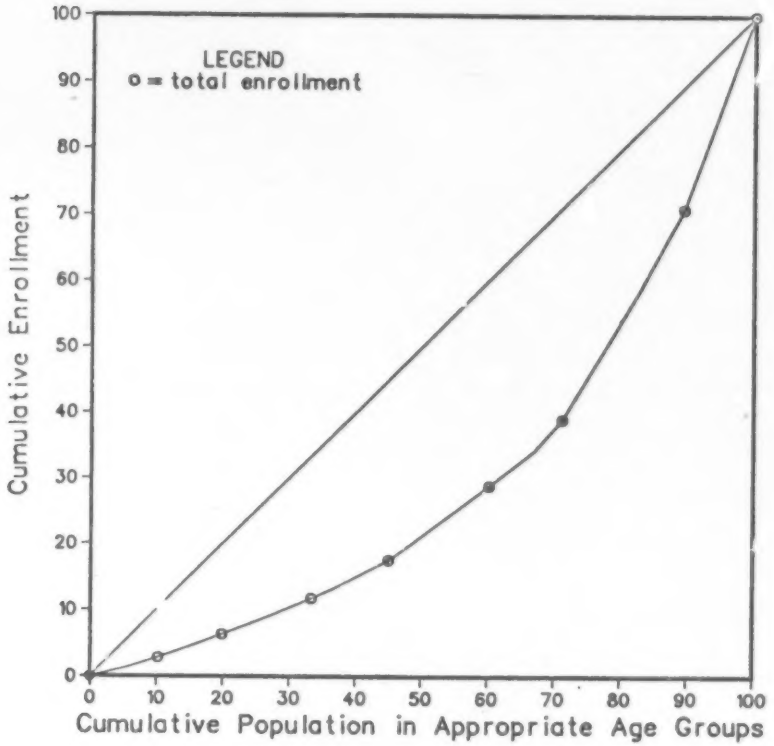
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.375	0.479	0.407	0.438

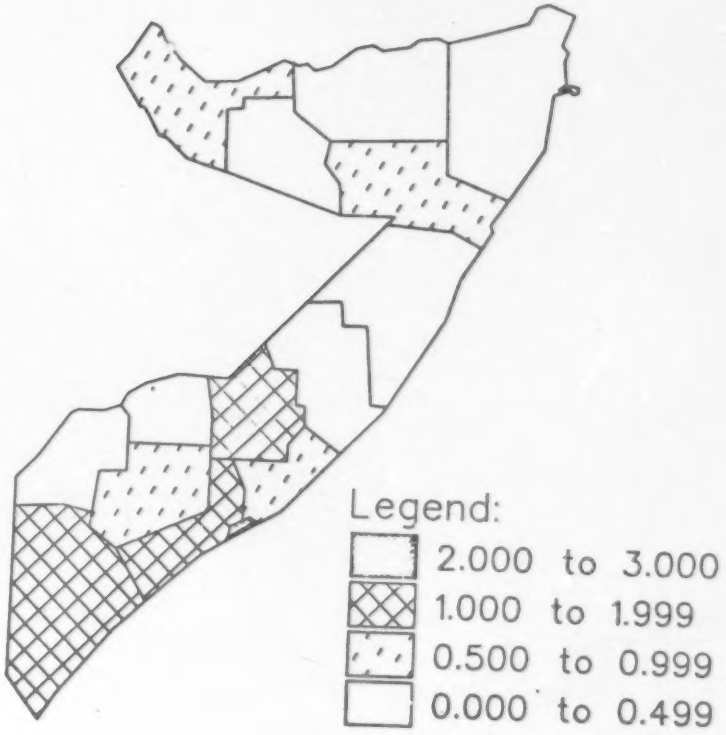
SOMALIA

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



Southern Sudan (1978)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Malakal	3,078	3,187	1.035	2,877	2,050	0.712	5,809	5,237	0.902
Kodok	10,789	3,779	0.350	9,185	1,105	0.120	19,461	4,884	0.251
Renk	10,708	3,462	0.323	8,528	1,647	0.193	18,726	5,109	0.273
Bentiu	23,279	2,388	0.103	16,536	309	0.019	38,706	2,697	0.070
Nasir	11,339	1,588	0.140	8,547	206	0.024	19,347	1,794	0.093
Sobat	3,106	1,025	0.330	2,743	131	0.048	5,701	1,156	0.203
Bor	13,418	3,354	0.250	10,710	581	0.054	23,489	3,935	0.168
Pibor	1,177	511	0.434	979	80	0.082	2,100	591	0.281
Akobo	5,117	1,331	0.260	3,735	101	0.027	8,608	1,432	0.166
Fangak	11,817	1,012	0.086	7,990	89	0.011	19,244	1,101	0.057
Raga	2,886	1,858	0.644	2,588	829	0.320	5,337	2,687	0.503
Aweil	50,327	4,268	0.085	42,368	615	0.015	90,299	4,883	0.054
Gogrial	20,820	2,792	0.094	27,253	275	0.010	55,653	3,067	0.055
Wau	14,402	5,212	0.362	12,256	2,738	0.223	25,972	7,950	0.306
Tonj	19,543	1,940	0.099	16,725	329	0.020	35,337	2,269	0.064
Rumbek	28,979	3,729	0.129	22,527	768	0.034	50,126	4,497	0.090
Yirol	15,123	1,458	0.096	11,510	486	0.042	25,913	1,944	0.075
Maridi	8,066	5,407	0.670	7,160	2,384	0.333	14,842	7,791	0.525
Tambura	4,655	2,669	0.573	3,757	928	0.247	8,189	3,597	0.439
Yambio	6,598	3,586	0.543	5,080	1,411	0.278	11,364	4,997	0.440
Juba Town	4,656	5,698	1.224	4,436	3,967	0.894	8,870	9,665	1.090
Juba Rural	12,698	4,763	0.375	11,204	1,319	0.118	23,297	6,082	0.261
Kapoeta	11,489	1,150	0.100	10,438	200	0.019	21,380	1,350	0.063
Torit	11,065	8,497	0.768	9,554	2,588	0.271	20,092	11,085	0.552
Yei	12,167	4,729	0.389	11,444	2,276	0.199	23,032	7,005	0.304
Total	310,763	79,393	0.255	270,130	27,412	0.101	580,893	106,805	0.184

B. Pyramid Ratio /Index (grade 6)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Malakal	0.676	1.519	1.495	1.558
Kodok	0.462	1.039	0.954	1.334
Renk	0.501	1.127	1.053	1.303
Bentiu	0.258	0.581	0.505	1.276
Nasir	0.255	0.573	0.577	0.534
Sobat	0.359	0.808	0.844	0.562
BOR	0.263	0.591	0.570	0.687
Pibor	0.237	0.532	0.543	0.450
Akobo	0.142	0.319	0.343	0.055
Fangak	0.115	0.258	0.207	1.323
Raga	0.538	1.210	1.350	0.913
Aweil	0.378	0.849	0.822	1.007
Gogrial	0.552	1.242	1.251	1.124
Wau	0.599	1.347	1.484	1.090
Tonj	0.567	1.276	1.463	0.544
Rumbek	0.619	1.392	1.540	0.832
Yirol	0.489	1.100	1.360	0.446
Maridi	0.414	0.932	1.158	0.486
Tambura	0.206	0.463	0.579	0.201
Yambio	0.303	0.682	0.866	0.316
Juba Town	0.564	1.268	1.565	0.911
Juba Rrual	0.388	0.872	1.049	0.387
Kapoeta	0.256	0.576	0.539	0.843
Torit	0.462	1.040	1.367	0.339
Yei	0.585	1.316	1.994	0.493
Total	-	-	1.095	0.756

C. Representation Index

District	Mixed	Total	
		Male	Female
Malakal	4.903	5.913	3.875
Kodok	1.365	2.000	0.654
Renk	1.484	1.846	1.050
Bentiu	0.379	0.586	0.102
Nasir	0.504	0.800	0.131
Sobat	1.103	1.885	0.260
BOR	0.911	1.427	0.295
Pibor	1.530	2.480	0.444
Akobo	0.905	1.485	0.147
Fangak	0.311	0.489	0.061
Raga	2.738	3.676	1.742
Aweil	0.294	0.484	0.079
Gogrial	0.300	0.535	0.055
Wau	1.665	2.067	1.215
Tonj	0.349	0.567	0.107
Rumbek	0.488	0.735	0.185
Yirol	0.408	0.551	0.230
Maridi	2.855	3.828	1.811
Tambura	2.389	3.275	1.344
Yambio	2.392	3.104	1.511
Juba Town	5.926	6.988	4.864
Juba Rural	1.420	2.142	0.640
Kapoeta	0.343	0.572	0.104
Torit	3.001	4.386	1.473
Yei	1.654	2.220	1.082
Total	-	1.389	0.552

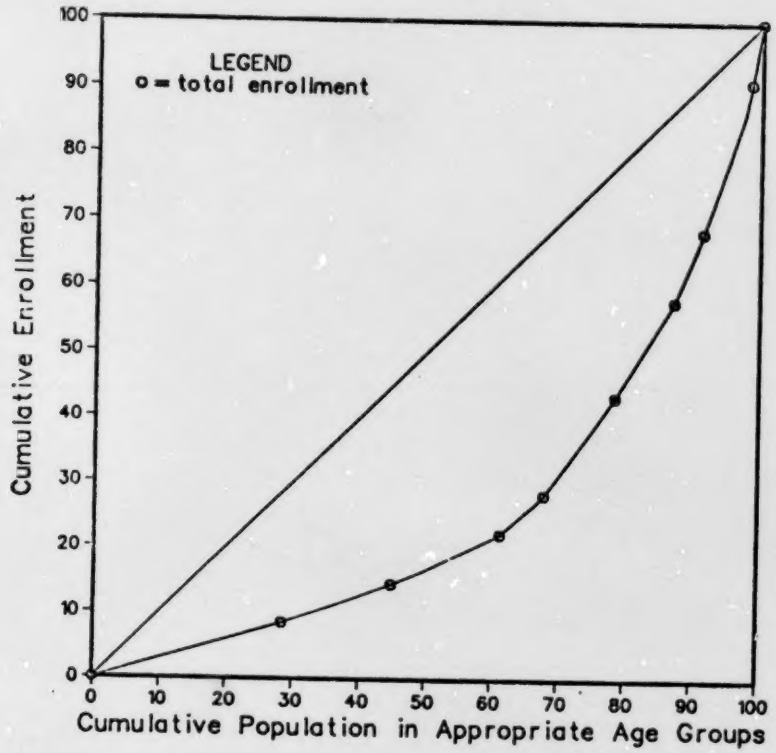
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.445	0.635	0.489	0.558

SOUTHERN SUDAN

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



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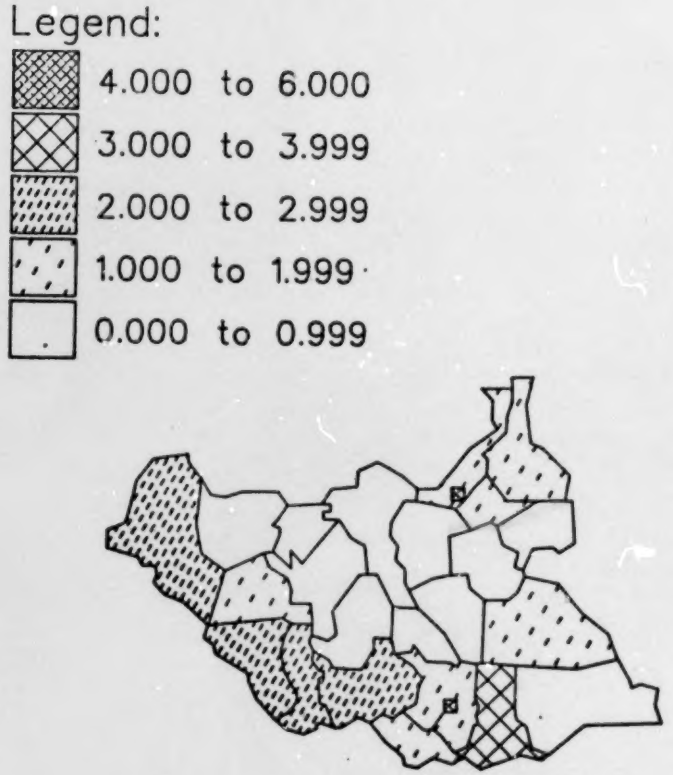
RI by District



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Sudan (1978)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Northern	36,651	25,541	0.697	37,205	24,882	0.669	73,857	50,423	0.683
Nile	52,554	52,537	1.000	52,465	45,007	0.858	105,019	97,544	0.929
Khartoum	98,363	80,156	0.815	97,776	69,851	0.714	196,139	150,007	0.765
Red Sea	28,198	15,821	0.561	24,490	11,812	0.482	52,688	27,633	0.524
Kassala	99,566	43,199	0.434	94,359	29,816	0.316	193,925	73,015	0.377
El Gazira	143,228	85,576	0.597	140,511	77,201	0.549	283,739	162,777	0.574
White Nile	99,885	54,305	0.544	95,041	22,322	0.235	194,926	76,627	0.393
Blue Nile	78,697	44,038	0.560	74,081	22,405	0.302	152,778	66,443	0.435
N. Kordofan	137,096	32,236	0.235	133,395	25,356	0.190	270,490	57,592	0.213
S. Kordofan	74,112	42,917	0.579	70,502	21,783	0.309	144,615	64,700	0.447
N. Darfur	91,525	38,408	0.420	91,432	16,817	0.184	182,956	55,225	0.302
S. Darfur	101,354	15,920	0.157	99,509	9,748	0.098	200,863	25,668	0.128
Upper Nile	62,299	15,377	0.247	50,838	5,316	0.105	113,137	20,693	0.183
Jonglei	30,775	6,208	0.202	24,585	851	0.035	55,360	7,059	0.128
Bahr El Gazal	97,435	15,024	0.154	88,688	4,457	0.050	186,123	19,481	0.105
Lakes	63,644	7,127	0.112	53,301	1,583	0.030	116,946	8,710	0.074
E. Equatoria	52,075	24,937	0.479	49,429	10,350	0.209	101,504	35,287	0.348
W. Equatoria	19,319	11,662	0.604	16,796	4,723	0.281	36,115	16,385	0.454
Total	1.366,776	610,989	0.447	1,294,403	404,280	0.322	2,661,179	1.015,269	0.382

B. Pyramid Ratio/Index (grade 6)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Northern	0.817	1.170	1.196	1.145
Nile	0.719	1.030	1.020	1.041
Khartoum	1.029	1.474	1.435	1.523
Read Sea	0.580	0.832	0.834	0.829
Kassala	0.658	0.943	0.959	0.920
El Gazira	0.797	1.142	1.151	1.132
White Nile	0.652	0.934	0.847	1.169
Blue Nile	0.576	0.825	0.798	0.879
N. Kordofan	0.787	1.128	1.109	1.151
S. Kordofan	0.570	0.816	0.879	0.707
N. Darfur	0.556	0.797	0.772	0.857
S. Darfur	0.680	0.974	1.046	0.877
Upper Nile	0.461	0.661	0.600	0.854
Jonglei	0.208	0.298	0.284	0.393
Bahr El Gazal	0.518	0.743	0.767	0.666
Lakes	0.575	0.823	0.943	0.413
E. Equatoria	0.484	0.693	0.870	0.375
W. Equatoria	0.328	0.470	0.586	0.233
Total	-	-	0.977	1.036

C. Representation Index

District	Mixed	Total	
		Male	Female
Northern	1.790	1.920	1.667
Nile	2.435	2.754	2.139
Khartoum	2.005	2.245	1.781
Read Sea	1.375	1.546	1.202
Kassala	0.987	1.195	0.788
El Gazira	1.504	1.646	1.370
White Nile	1.030	1.498	0.586
Blue Nile	1.140	1.542	0.754
N. Kordofan	0.558	0.648	0.474
S. Kordofan	1.173	1.596	0.770
N. Darfur	0.791	1.156	0.459
S. Darfur	0.335	0.433	0.244
Upper Nile	0.479	0.680	0.261
Jonglei	0.334	0.556	0.086
Hahr El Gazal	0.274	0.425	0.125
Lakes	0.195	0.309	0.074
E. Equatoria	0.911	1.319	0.522
W. Equatoria	1.189	1.663	0.701
Total	-	1.232	0.779

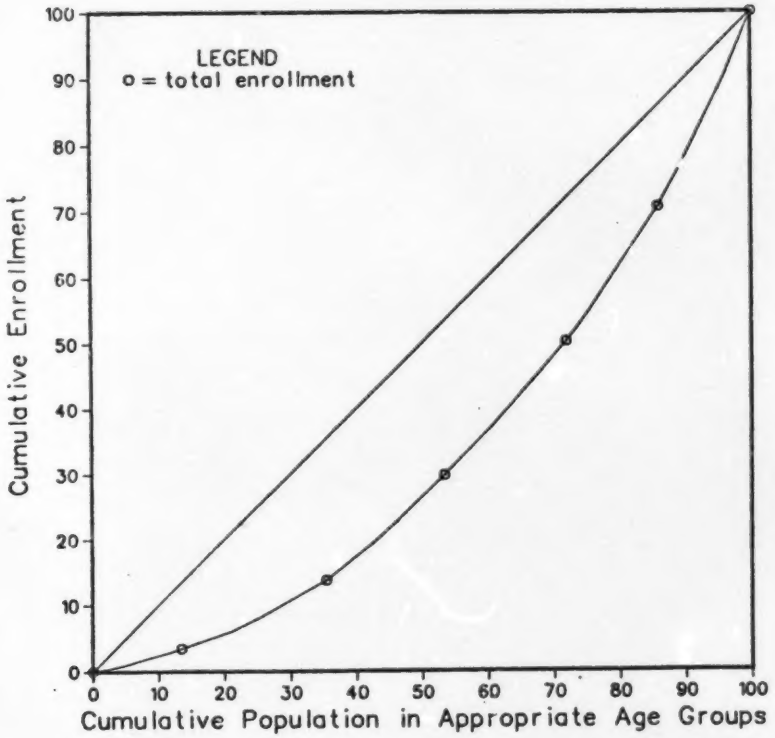
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.790	0.401	0.330	0.363

SUDAN

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



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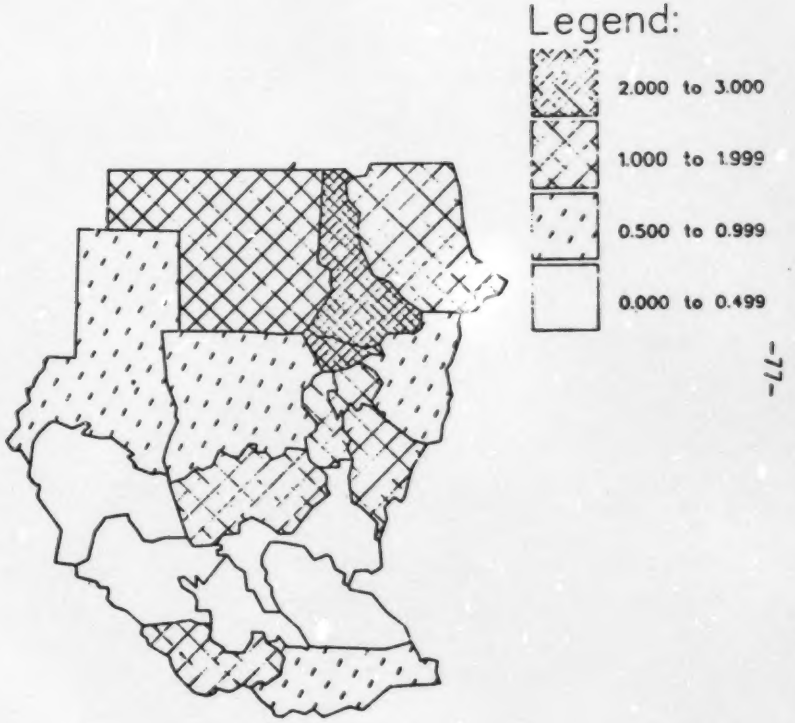
RI by District



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Swaziland (1979)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Hhohho	14,753	13,829	0.937	15,067	13,441	0.892	29,820	27,270	0.914
Manzini	15,015	16,810	1.120	15,478	16,451	1.063	30,492	33,261	1.091
Shiselweni	14,504	13,473	0.929	14,723	13,960	0.948	29,227	27,433	0.939
Lubombo	10,948	8,822	0.806	11,092	8,821	0.795	22,040	17,643	0.801
Total	55,220	52,934	0.957	56,360	52,673	0.935	111,580	105,607	0.946

B. Pyramid Ratio/Index (grade 7)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Hhohho	0.536	1.164	1.125	1.205
Manzini	0.509	1.105	1.058	1.155
Shiselweni	0.449	0.974	0.872	1.081
Lumbombo	0.310	0.674	0.655	0.692
Total	-	-	0.947	1.055

C. Representation Index

District	Mixed	Total	
		Male	Female
Hhohho	0.966	0.990	0.943
Manzini	1.152	1.183	1.123
Shiselweni	0.992	0.981	1.002
Lumbombo	0.846	0.851	0.840
Total	-	1.013	0.987

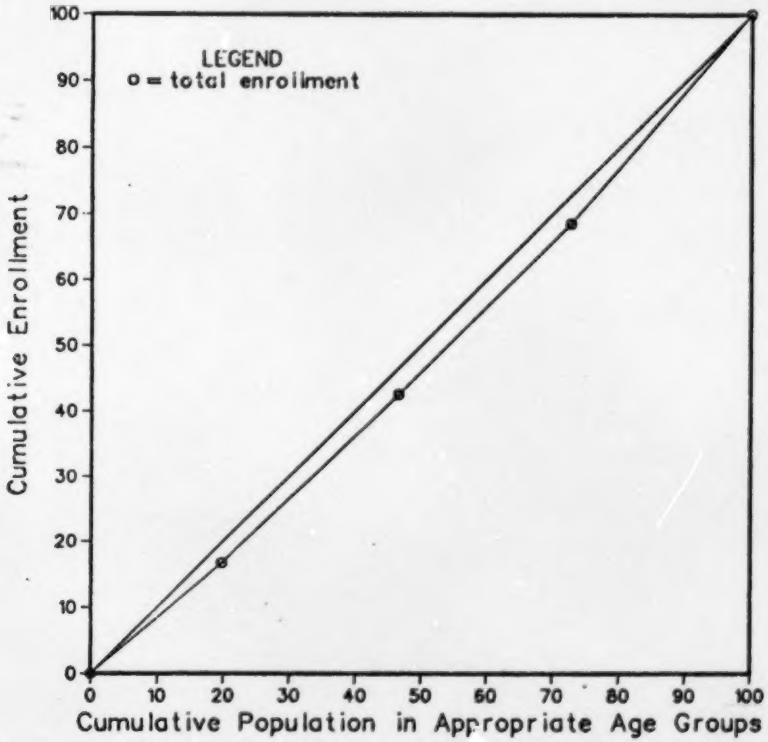
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.060	0.056	0.057	0.060

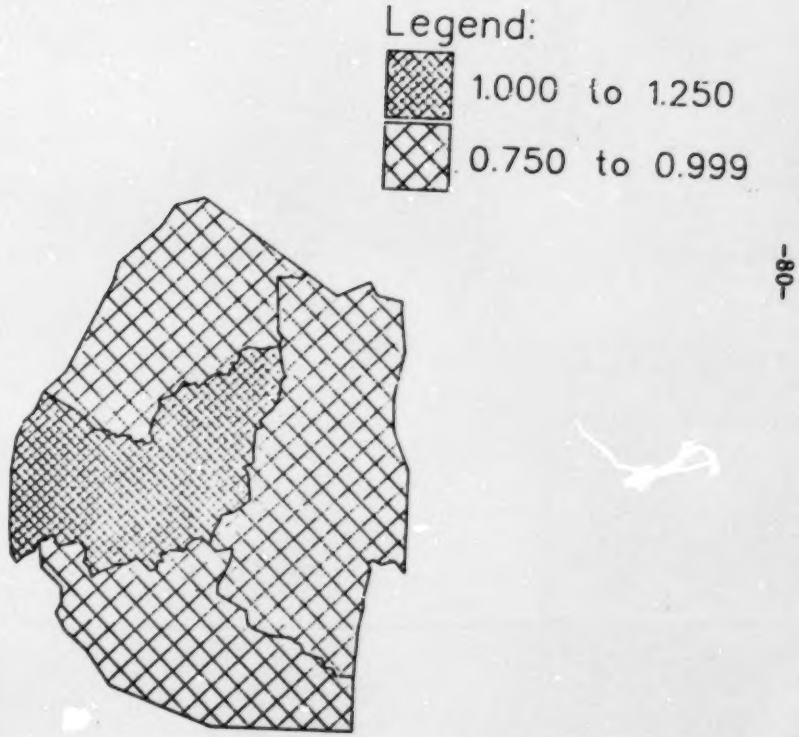
SWAZILAND

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



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Tanzania (1978)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Arusha (N)	6,358	6,666	1.048	6,515	6,158	0.945	12,873	12,824	0.996
Arumeru	23,995	22,559	0.940	23,514	19,623	0.835	47,508	42,182	0.888
Hanang	23,931	15,968	0.667	22,275	12,408	0.557	46,206	28,376	0.614
Mbulu	21,120	17,252	0.817	19,726	17,447	0.884	40,847	34,699	0.849
Monduli	10,867	7,131	0.656	9,296	4,372	0.470	20,163	11,503	0.571
Kiteto	5,480	4,686	0.855	4,879	3,463	0.710	10,359	8,149	0.787
Kinondoni	26,618	20,971	0.788	28,871	21,108	0.731	55,489	42,079	0.758
Ilala	15,903	15,938	1.002	17,057	14,904	0.874	32,960	30,842	0.936
Temeke	18,668	13,579	0.727	19,843	12,555	0.633	38,511	26,131	0.679
Dodoma (U)	13,592	13,928	1.025	14,185	12,577	0.887	27,777	26,505	0.954
Dodoma (R)	25,623	24,385	0.952	25,986	20,894	0.804	51,609	45,279	0.877
Kondoa	29,018	28,964	0.998	28,010	23,179	0.828	57,028	52,143	0.914
Mpwapwa	25,521	25,022	0.980	25,468	21,246	0.834	50,989	46,268	0.907
Iringa (U)	4,715	4,271	0.906	5,442	4,358	0.801	10,157	8,629	0.850
Iringa (R)	30,021	31,747	1.057	29,153	25,345	0.869	59,174	57,092	0.965
Ludewa	7,821	8,470	1.083	7,910	7,982	1.009	15,730	16,452	1.046
Rufindi	17,614	18,370	1.043	18,022	14,324	0.795	35,635	32,694	0.917
Njombo	33,333	34,340	1.030	33,868	30,044	0.887	67,201	64,384	0.958
Kigoma (U)	5,001	4,766	0.953	5,022	4,654	0.927	10,023	9,420	0.940
Kigoma (R)	16,605	15,796	0.951	15,979	13,719	0.859	32,584	29,515	0.906
Kibonda	12,905	13,733	1.064	13,029	12,137	0.932	25,933	25,870	0.998
Kasulu	24,539	26,795	1.092	24,068	21,904	0.910	48,607	48,699	1.002
Hai	18,630	18,898	1.014	18,343	18,519	1.010	36,973	37,417	1.012
Moshi (U)	3,683	4,473	1.214	3,849	4,214	1.095	7,532	8,687	1.153
Moshi (R)	35,450	37,344	1.053	35,620	36,727	1.031	71,070	74,071	1.042
Pare	23,956	27,303	1.140	23,708	26,184	1.104	47,664	53,487	1.122
Rombo	17,002	19,220	1.130	17,197	18,473	1.074	34,199	37,693	1.102
Lindi (U)	1,980	1,693	0.855	2,179	1,696	0.778	4,160	3,389	0.815
Lindi (R)	19,915	21,285	1.069	19,254	17,820	0.926	39,169	39,113	0.999
Liwale	3,225	4,389	1.361	3,252	3,400	1.045	6,477	7,789	1.203
Kilwa	11,000	10,877	0.989	10,140	7,629	0.752	21,140	18,506	0.875
Nachingwea	8,452	9,336	1.105	8,879	8,672	0.977	17,331	18,008	1.039
Musoma	25,284	29,568	1.169	22,925	27,128	1.183	48,209	56,696	1.176
Serengeti	20,869	25,021	1.199	20,908	19,841	0.949	41,777	44,862	1.074
Tarime	27,438	31,189	1.137	27,119	26,590	0.980	54,558	57,779	1.059
Mbeya (U)	6,251	6,437	1.030	7,054	6,630	0.940	13,305	13,067	0.982
Mbeya (R)	23,737	20,621	0.869	22,955	16,378	0.713	46,692	36,999	0.792
Chunya	8,022	7,441	0.928	7,920	6,369	0.804	15,942	13,810	0.866
Kyela	11,031	13,943	1.264	11,009	11,655	1.059	22,041	25,598	1.161
Nbozi	23,785	24,445	1.028	23,302	19,467	0.835	47,087	43,912	0.933
Rungwe	24,454	30,169	1.234	24,185	23,730	0.981	48,639	53,899	1.109
Ileje	7,537	8,676	1.151	7,571	7,044	0.930	15,108	15,720	1.040
Morogoro (U)	5,741	4,613	0.804	6,399	4,692	0.733	12,140	9,305	0.767

Morogoro (R)	31,672	32,610	1.030	30,535	26,352	0.863	62,207	58,962	0.948
Kilosa	24,879	23,811	0.957	24,563	21,013	0.855	49,442	44,824	0.907
Kilombero	11,342	10,969	0.967	11,161	9,422	0.844	22,502	20,391	0.906
Ulanga	11,512	12,093	1.050	10,926	10,184	0.932	22,438	22,277	0.993
Mtwara (U)	3,723	2,969	0.797	3,905	2,818	0.722	7,628	5,787	0.759
Mtwara (R)	12,133	12,083	0.996	11,437	8,490	0.742	23,570	20,573	0.873
Newala	27,576	31,236	1.133	27,064	25,640	0.947	54,641	56,876	1.041
Masasi	24,007	25,382	1.057	24,066	24,147	1.003	48,073	49,529	1.030
Mwanza	12,742	11,089	0.870	13,002	9,578	0.737	25,744	20,667	0.803
Magu	25,492	25,489	1.000	25,162	19,405	0.771	50,654	44,894	0.886
Kwimba	33,119	31,530	0.952	32,705	23,318	0.713	65,825	54,848	0.833
Geita	29,447	27,266	0.926	28,930	20,241	0.700	58,376	47,507	0.814
Sengerema	23,172	25,445	1.098	22,647	20,464	0.904	45,818	45,909	1.002
Ukerewe	13,827	15,410	1.114	13,640	13,497	0.990	27,467	28,907	1.052
Bagamoyo	13,065	15,539	1.189	12,759	12,813	1.004	25,824	28,352	1.098
Kisarawe	19,473	24,120	1.239	18,111	18,338	1.013	37,583	42,458	1.130
Mafia	2,073	2,028	0.978	1,913	1,718	0.898	3,986	3,746	0.940
Rufiji	11,564	12,830	1.110	10,646	9,508	0.893	22,210	22,338	1.006
Mpanda	13,500	7,618	0.564	13,345	6,348	0.476	26,845	13,966	0.520
Sumbawanga	29,376	30,212	1.028	28,969	24,252	0.837	58,346	54,464	0.933
Mpinga	20,480	22,904	1.118	20,496	21,039	1.026	40,976	43,943	1.072
Songea	22,013	23,274	1.057	23,122	21,959	0.950	45,135	45,233	1.002
Tunduru	12,008	12,902	1.074	11,620	10,628	0.915	23,628	23,530	0.996
Shinyangam (U)	5,928	5,485	0.925	5,982	4,499	0.752	11,910	9,984	0.838
Shinyangav (R)	36,437	32,414	0.890	35,594	22,090	0.621	72,031	54,504	0.757
Bariadi	32,435	27,616	0.851	32,690	17,752	0.543	65,125	45,368	0.697
Kahama	28,543	22,812	0.799	28,268	16,255	0.575	56,811	39,067	0.688
Maswa	28,984	28,264	0.975	30,552	18,520	0.606	59,537	46,784	0.786
Singida (U)	4,938	3,794	0.768	5,053	3,639	0.720	9,991	7,433	0.744
Singida (R)	21,171	17,744	0.838	20,995	15,377	0.732	42,166	33,121	0.785
Iramba	24,309	21,297	0.876	23,234	17,933	0.772	47,543	39,230	0.825
Manyoni	8,652	9,416	1.088	8,463	8,361	0.988	17,115	17,777	1.039
Tabora (U)	4,955	5,747	1.160	5,263	5,206	0.989	10,218	10,953	1.072
Tabora (R)	16,272	15,860	0.975	15,631	13,078	0.837	31,903	28,938	0.907
Igunga	17,747	13,873	0.782	16,533	10,079	0.610	34,280	23,952	0.699
Nzega	20,910	17,430	0.834	19,975	12,929	0.647	40,884	30,359	0.743
Urambo	13,026	6,822	0.524	12,647	5,513	0.436	25,672	12,335	0.480
Tanga	11,871	10,917	0.920	12,182	10,528	0.864	24,053	21,445	0.892
Korogwe	18,959	17,908	0.945	18,700	16,682	0.892	37,659	34,590	0.919
Handeni	19,431	17,657	0.909	18,687	14,632	0.783	38,118	32,289	0.847
Lushoto	31,827	29,637	0.931	31,932	25,328	0.793	63,759	54,965	0.862
Muheza	18,603	18,229	0.980	17,755	16,935	0.954	36,358	35,164	0.967
Pangani	2,840	3,240	1.141	2,767	2,862	1.034	5,607	6,102	1.088
Bukoba (U)	6,445	5,553	0.862	6,656	5,843	0.877	13,111	11,396	0.869
Bukoba (R)	24,840	20,928	0.842	24,463	19,144	0.783	49,303	40,072	0.813
Biharamulo	14,648	13,200	0.907	14,440	10,411	0.721	29,088	23,701	0.815
Karagwe	17,688	15,860	0.897	17,335	12,677	0.731	35,023	28,537	0.815
Muleba	20,127	19,367	0.962	19,877	16,046	0.807	40,005	35,413	0.885
Ngara	9,326	10,854	1.164	9,443	9,363	0.991	18,770	20,217	1.077

(U) = Urban
(R) = Rural

B. Pyramid Rate/Index (Grade 6)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Arusha (N)	0.340	1.536	1.629	1.443
Arumeru	0.199	0.900	0.986	0.811
Hanang	0.175	0.789	0.854	0.709
Mbulu	0.160	0.722	0.787	0.648
Monduli	0.136	0.615	0.693	0.501
Kiteto	0.169	0.762	0.837	0.671
Kinondoni	0.163	0.735	0.793	0.681
Ilala	0.295	1.330	1.318	1.344
Temeke	0.160	0.724	0.799	0.647
Dodoma (U)	0.251	1.131	1.233	1.026
Dodoma (R)	0.294	1.329	1.470	1.181
Kondoa	0.224	1.013	1.140	0.866
Mpwapwa	0.207	0.934	1.004	0.850
Iringa (U)	0.357	1.613	1.744	1.491
Iringa (R)	0.123	0.555	0.635	0.463
Ludewa	0.158	0.715	0.824	0.605
Rufindi	0.117	0.530	0.679	0.369
Njombo	0.174	0.787	0.900	0.672
Kigoma (U)	0.237	1.070	1.385	0.810
Kigoma (R)	0.170	0.768	0.850	0.673
Kibonda	0.324	1.460	1.748	1.181
Kasulu	0.268	1.208	1.558	0.851
Hai	0.234	1.056	1.025	1.087
Moshi (U)	0.376	1.697	1.888	1.508
Moshi (R)	0.293	1.321	1.360	1.281
Pare	0.324	1.460	1.448	1.473
Rombo	0.289	1.304	1.473	1.141
Lindi (U)	0.359	1.620	1.682	1.557
Lindi (R)	0.340	1.536	1.727	1.329
Liwale	0.395	1.783	2.281	1.205
Kilwa	0.364	1.642	1.951	1.278
Nachingwea	0.244	1.103	1.378	0.827
Musoma	0.337	1.521	1.704	1.322
Serengeti	0.203	0.914	1.112	0.705
Tarime	0.237	1.068	1.376	0.766
Mbeya (U)	0.379	1.713	1.939	1.518
Mbeya (R)	0.173	0.779	0.873	0.671
Chunya	0.362	1.632	1.861	1.395
Kyela	0.349	1.576	1.918	1.219
Nbczi	0.130	0.587	0.666	0.498
Rungwe	0.137	0.616	0.610	0.625
Ileje	0.188	0.850	0.987	0.700
Morogoro (U)	0.311	1.403	1.493	1.316
Morogoro (R)	0.260	1.174	1.277	1.056
Kilosa	0.185	0.836	0.848	0.822
Kilombero	0.183	0.828	0.930	0.715
Ulanga	0.287	1.295	1.423	1.151
Mtwara (U)	0.349	1.576	1.828	1.327
Mtwara (R)	0.381	1.718	2.107	1.270
Newala	0.377	1.702	1.828	1.566
Masasi	0.297	1.342	1.379	1.303

Mwanza	0.237	1.070	1.311	0.826
Magu	0.199	0.899	1.122	0.642
Kwimba	0.161	0.724	0.893	0.539
Musita	0.121	0.548	0.683	0.394
Sengerema	0.196	0.885	1.069	0.684
Ukerewe	0.224	1.009	1.148	0.863
Bagamoyo	0.244	1.102	1.238	0.958
Kisarawe	0.123	0.554	0.642	0.450
Mafia	0.348	1.571	1.569	1.574
Rufiji	0.327	1.478	1.772	1.146
Mpanda	0.323	1.456	1.712	1.190
Sumbawanga	0.222	1.002	1.192	0.790
Mpinga	0.326	1.470	1.571	1.365
Songea	0.311	1.402	1.541	1.263
Tunduru	0.297	1.341	1.345	1.336
Shinyanga (U)	0.151	0.683	0.859	0.501
Shinyanga (R)	0.117	0.527	0.673	0.354
Bariadi	0.094	0.422	0.553	0.267
Kahama	0.130	0.585	0.662	0.488
Maswa	0.141	0.638	0.861	0.373
Singida (U)	0.307	1.384	1.503	1.266
Singida (R)	0.367	1.654	1.766	1.532
Iramba	0.245	1.107	1.200	1.003
Manyoni	0.383	1.728	1.868	1.581
Tabora (U)	0.270	1.220	1.385	1.049
Tabora (R)	0.211	0.953	1.109	0.783
Igunga	0.106	0.477	0.551	0.388
Nzega	0.226	1.018	1.054	0.976
Urambo	0.186	0.841	0.999	0.662
Tanga	0.275	1.240	1.498	0.999
Kerogwe	0.249	1.125	1.203	1.040
Handeni	0.332	1.500	1.691	1.291
Lushoto	0.323	1.456	1.679	1.216
Muheza	0.149	0.672	0.446	0.921
Pangani	0.211	0.953	1.056	0.835
Bukoba (U)	0.486	2.195	2.331	2.059
Bukoba (R)	0.365	1.648	1.769	1.521
Biharamule	0.190	0.858	1.015	0.687
Karagwe	0.205	0.924	0.846	1.038
Muleba	0.221	0.997	1.004	0.989
Ngara	0.438	1.976	2.198	1.754

(U) = urban
(R) = rural

C. Representation Index

District	Mixed	Total	
		Male	Female
Arusha (II)	1.099	1.156	1.043
Arumeru	0.979	1.037	0.921
Hanang	0.677	0.736	0.614
Mbulu	0.937	0.901	0.976
Monduli	0.629	0.724	0.519
Kiteto	0.868	0.943	0.783
Kinondoni	0.837	0.869	0.806
Ilala	1.032	1.106	0.964
Temeke	0.749	0.802	0.698
Dodoma (U)	1.053	1.130	0.978
Dodoma (R)	0.968	1.050	0.887
Kondoa	1.009	1.101	0.913
Mpwapwa	1.001	1.081	0.920
Iringa (U)	0.937	0.999	0.883
Iringa (R)	1.064	1.167	0.959
Ludewa	1.154	1.195	1.113
Rufindi	1.012	1.150	0.877
Njombo	1.057	1.136	0.979
Kigoma (U)	1.037	1.051	1.022
Kigoma (R)	0.999	1.049	0.947
Kibonda	1.100	1.174	1.028
Kasulu	1.105	1.204	1.004
Hai	1.116	1.119	1.114
Moshi (U)	1.272	1.340	1.208
Moshi (R)	1.150	1.162	1.137
Pare	1.238	1.257	1.218
Rombo	1.216	1.247	1.185
Lindi (U)	0.899	0.943	0.858
Lindi (R)	1.102	1.179	1.021
Liwale	1.327	1.501	1.153
Kilwa	0.966	1.091	0.830
Nachingwea	1.146	1.218	1.077
Musoma	1.297	1.290	1.305
Serengeti	1.185	1.323	1.047
Tarime	1.168	1.254	1.082
Mbeya (U)	1.083	1.136	1.037
Mbeya (R)	0.874	0.958	0.787
Chunya	0.956	1.023	0.887
Kyela	1.281	1.394	1.168
Nbozi	1.029	1.134	0.922
Rungwe	1.222	1.361	1.082
Ileje	1.148	1.270	1.026
Morogoro (U)	0.846	0.886	0.809
Morogoro (R)	1.046	1.136	0.952
Kilosa	1.000	1.056	0.944
Kilombero	1.000	1.067	0.931
Ulanga	1.095	1.159	1.028

Mtwara (U)	0.837	0.880	0.796
Mtwara (R)	0.963	1.099	0.819
Newala	1.148	1.249	1.045
Masasi	1.137	1.166	1.107
Mwanza	0.886	0.960	0.813
Magu	0.978	1.103	0.851
Kwimba	0.919	1.050	0.786
Geita	0.898	1.021	0.772
Sengerema	1.105	1.211	0.997
Ukerewe	1.161	1.229	1.092
Bagamoyo	1.211	1.312	1.108
Kisarawe	1.246	1.366	1.117
Mafia	1.037	1.079	0.991
Rufiji	1.109	1.224	0.985
Mpanda	0.574	0.622	0.525
Sumbawanga	1.030	1.134	0.923
Mpinga	1.183	1.234	1.132
Songea	1.105	1.166	1.048
Tunduru	1.099	1.185	1.009
Shinyanga (U)	0.925	1.021	0.830
Shinyanga (R)	0.835	0.981	0.685
Bariadi	0.768	0.939	0.599
Kahama	0.759	0.882	0.634
Maswa	0.867	1.076	0.669
Singida (U)	0.821	0.848	0.794
Singida (R)	0.866	0.925	0.808
Iramba	0.910	0.966	0.851
Manyoni	1.146	1.200	1.090
Tabora (U)	1.182	1.279	1.091
Tabora (R)	1.001	1.075	0.923
Igunga	0.771	0.862	0.672
Nzega	0.819	0.920	0.714
Urambo	0.530	0.578	0.481
Tanga	0.983	1.014	0.953
Kerogwe	1.013	1.042	0.984
Handeni	0.934	1.002	0.864
Lushoto	0.951	1.027	0.875
Muheza	1.067	1.081	1.052
Pangani	1.200	1.258	1.141
Bukoba (U)	0.959	0.950	0.967
Bukoba (R)	0.897	0.929	0.863
Biharamulo	0.899	1.001	0.795
Karagwe	0.899	0.989	0.807
Muleba	0.976	1.061	0.890
Ngara	1.188	1.284	1.094

D. Gini Coefficient

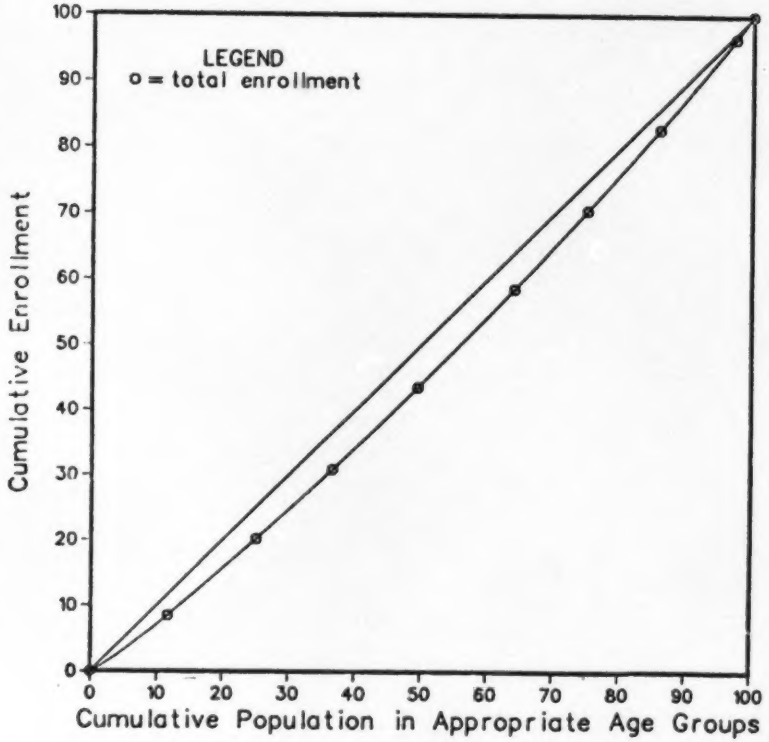
	Male	Female	Mixed	Total
Gini	0.078	0.102	0.086	0.1

(U)= urban
(R)= rural

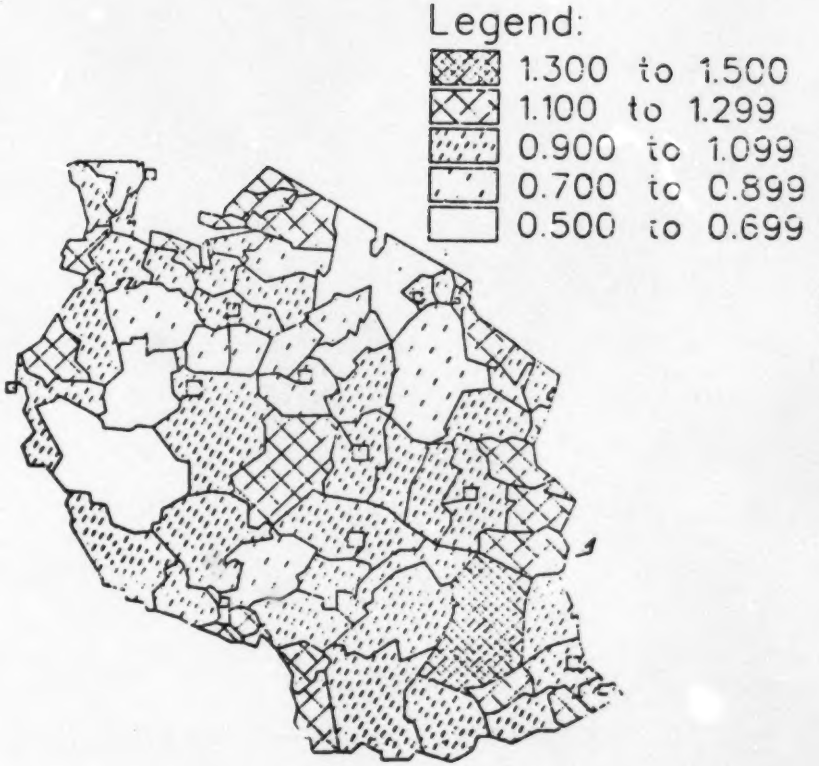
TANZANIA

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



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Uganda (1978)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Nile	75,890	74,002	0.975	72,914	34,688	0.476	148,803	108,690	0.730
Northern	88,122	102,816	1.167	84,666	51,765	0.611	172,788	154,581	0.895
Karamoja	34,219	9,062	0.265	32,877	3,512	0.107	67,097	12,574	0.187
Eastern	159,249	135,366	0.850	153,004	90,507	0.592	312,253	225,873	0.723
Busoga	91,928	71,633	0.779	88,323	55,990	0.634	180,252	127,623	0.708
North Buganda	113,162	78,095	0.690	108,724	71,907	0.661	221,886	150,002	0.676
South Buganda	65,443	42,375	0.648	62,877	40,742	0.648	128,320	83,117	0.648
Central	77,213	63,987	0.829	74,185	63,059	0.850	151,398	127,046	0.839
Southern	177,295	111,225	0.627	170,342	91,465	0.537	347,643	202,690	0.583
Western	93,298	70,058	0.751	89,639	52,109	0.581	182,937	122,167	0.668
Total	975,823	758,619	0.777	937,555	555,744	0.593	1,913,378	1,314,363	0.687

B. Pyramid Rate/Index (Grade 6)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Nile	0.410	0.837	1.046	0.518
Northern	0.557	1.176	1.373	0.879
Karamoja	0.331	0.675	0.731	0.555
Eastern	0.574	1.171	1.321	0.979
Busoga	0.514	1.048	1.153	0.928
North Buganda	0.389	0.793	0.815	0.769
South Buganda	0.477	0.972	0.960	0.986
Central	0.636	1.296	1.506	1.087
Southern	0.404	0.824	0.941	0.676
Western	0.478	0.975	1.058	0.875

C. Representation Index

District	Mixed	Total	
		Male	Female
Nile	1.063	1.420	0.693
Northern	1.302	1.698	0.890
Karamoja	0.273	0.386	0.156
Eastern	1.053	1.237	0.861
Gusoga	1.031	1.134	0.923
North Buganda	0.984	1.005	0.963
South Buganda	0.943	0.943	0.943
Central	1.222	1.206	1.237
Southern	0.849	0.913	0.782
Western	0.972	1.093	0.846

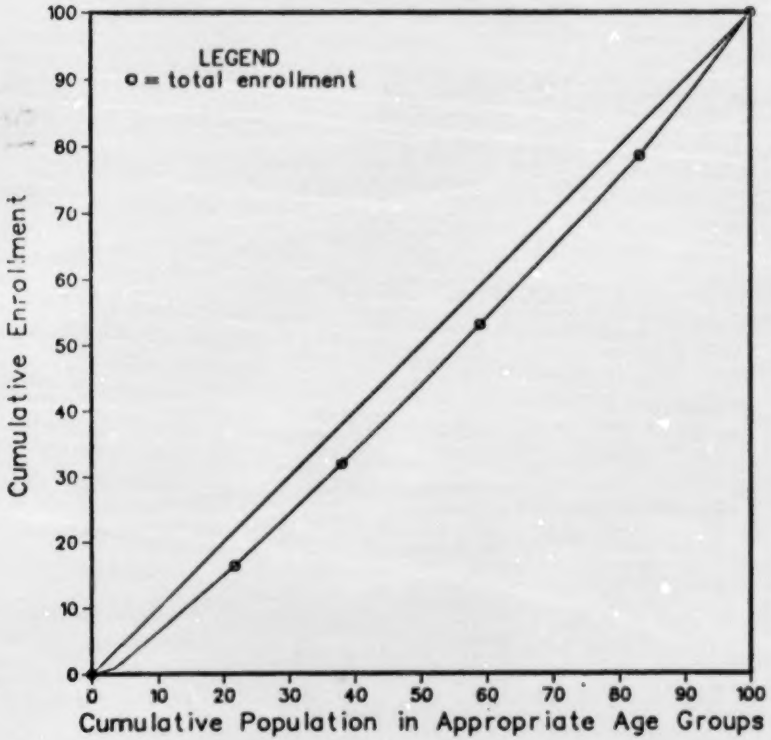
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.123	0.099	0.092	0.139

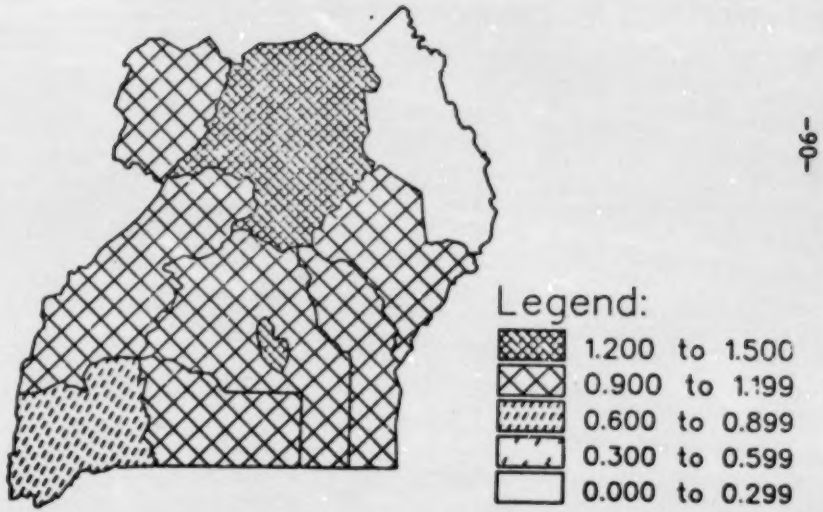
UGANDA

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



Zambia (1977)

A. School Age Population and Enrollment

District	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Luapula	36,339	39,703	1.093	34,939	31,734	1.041	71,278	71,437	1.002
Northern	59,566	68,335	1.147	58,709	51,570	1.007	118,275	119,905	1.014
Eastern	56,051	59,348	1.059	54,651	43,964	0.922	110,702	103,312	0.933
Kabwe	34,608	44,683	1.291	34,344	38,826	1.295	68,952	83,509	1.211
Lusaka	66,584	47,944	0.720	66,077	45,325	0.786	132,661	93,269	0.703
Cooperbelt	124,906	104,886	0.840	122,734	100,820	0.941	247,640	205,706	0.831
Northwestern	24,683	26,658	1.080	24,770	20,149	0.932	49,453	46,807	0.946
Southern	55,909	69,125	1.236	54,509	62,489	1.314	110,418	131,614	1.192
Western	45,253	43,930	0.971	44,395	37,235	0.961	89,648	81,165	0.905
Total	503,899	504,612	1.001	495,128	432,112	0.873	999,027	936,724	0.938

B. Pyramid Rate/Index (Grade 6)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Luapula	0.638	0.885	1.041	0.719
Northern	0.587	0.814	0.980	0.633
Eastern	0.598	0.830	0.994	0.651
Kabwe	0.680	0.942	1.040	0.840
Lusaka	0.854	1.184	1.253	1.115
Cooperbelt	0.932	1.292	1.350	1.234
Northwestern	0.564	0.782	0.936	0.614
Southern	0.708	0.982	1.077	0.906
Western	0.701	0.972	1.077	0.859

C. Representation Index

District	Mixed	Total	
		Male	Female
Luapula	1.069	1.165	0.969
Northern	1.081	1.224	0.937
Eastern	0.995	1.129	0.858
Kabwe	1.292	1.377	1.206
Lusaka	0.750	0.768	0.732
Cooperbelt	0.886	0.896	0.876
Northwestern	1.009	1.152	0.868
Southern	1.271	1.319	1.223
Western	0.966	1.035	0.895

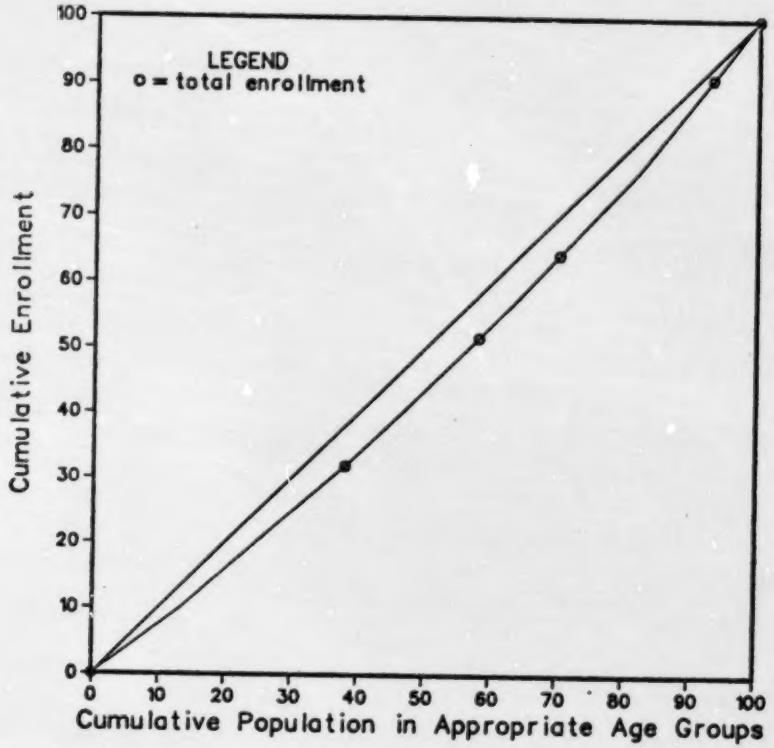
D. Gini Coefficient

	Male	Female	Mixed	Total
Gini	0.103	0.081	0.091	0.103

ZAMBIA

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



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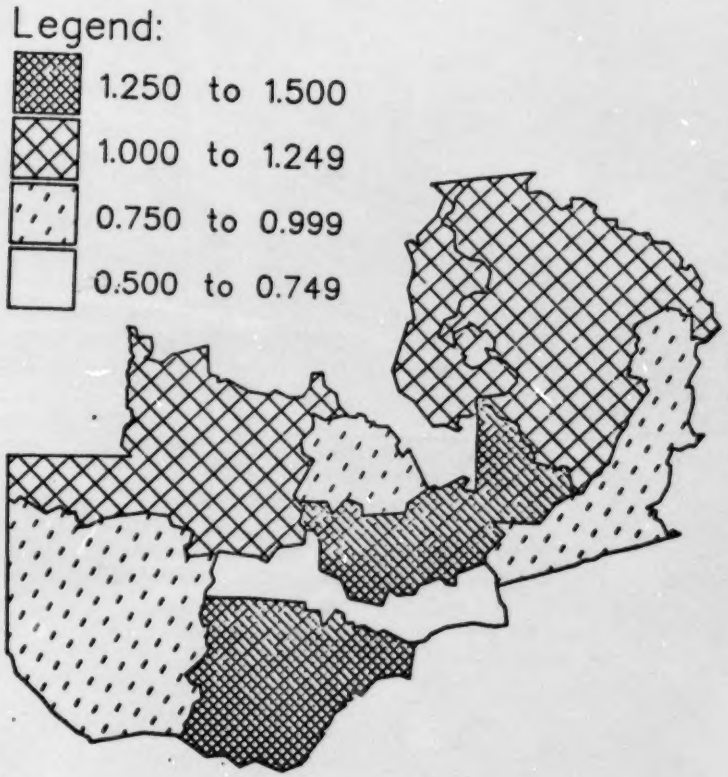
RI by District



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Zaire (1976)

A. School Age Population and Enrollment

Province	Male			Female			Mixed		
	Pop.	Enr.	PAR	Pop.	Enr.	PAR	Pop.	Enr.	PAR
Kinshasa	203,245	203,624	1.002	194,875	131,848	0.677	398,030	335,472	0.843
Bas Zaire	144,823	205,721	1.420	138,841	133,236	0.960	283,664	338,957	1.195
Haut Zaire	302,211	242,206	0.801	289,728	156,829	0.541	591,939	399,035	0.674
Equateur	227,458	175,759	0.733	218,061	113,805	0.522	445,519	289,564	0.650
Bandundu	247,691	277,143	1.119	237,458	179,451	0.756	485,149	456,594	0.941
Kivu	373,355	263,639	0.811	311,779	170,709	0.548	636,994	434,348	0.682
Shaba	269,840	270,711	1.003	258,691	175,287	0.678	528,531	445,998	0.844
Kasai Occidentale	172,722	302,650	1.752	165,588	195,965	1.183	338,310	498,617	1.474
Kasai Orientale	234,485	199,336	0.850	224,800	129,702	0.574	459,285	328,408	0.715
Total	2,175,830	2,140,789	0.984	2,039,731	1,386,204	0.680	4,215,561	3,526,493	0.837

B. Pyramid Ratio/Index (grade 6)

District	Mixed		Total	
	P.Y.R.	P.I.	P.I. Male	P.I. Female
Kinshasa	0.363	1.000	1.219	0.711
Bas Zaire	0.363	1.000	1.219	0.711
Haut Zaire	0.363	1.000	1.219	0.711
Equateur	0.363	1.000	1.219	0.711
Bandundu	0.363	1.000	1.219	0.711
Kivu	0.363	1.000	1.219	0.711
Shaba	0.363	1.000	1.219	0.711
Kasai Occidentale	0.363	1.000	1.219	0.711
Kasai Orientale	0.363	1.000	1.219	0.711
Total	-	-	1.219	0.711

C. Representation Index

District	Mixed	Total	
		Male	Female
Kinshasa	0.996	1.184	0.800
Bas Zaire	1.412	1.678	1.134
Haut Zaire	0.797	0.947	0.640
Equateur	0.768	0.913	0.617
Bandundu	1.112	1.322	0.893
Kivu	0.806	0.958	0.647
Shaba	0.997	1.185	0.801
Kasai Occidentale	1.741	2.070	1.398
Kasai Orientale	0.845	1.004	0.678
Total	-	1.189	0.803

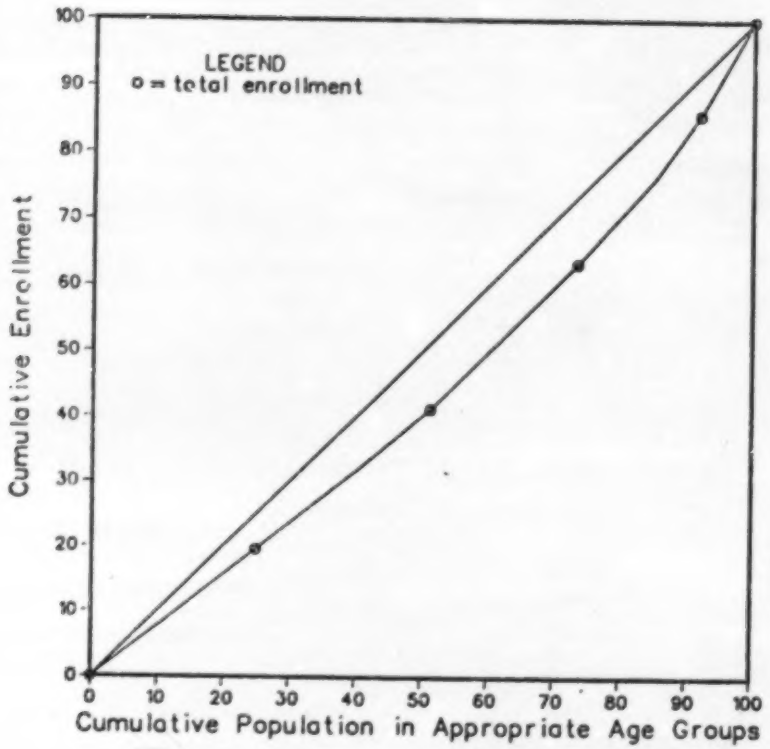
D. Gini Coefficient

Male	Female	Mixed	Total
0.137	0.137	0.137	0.180

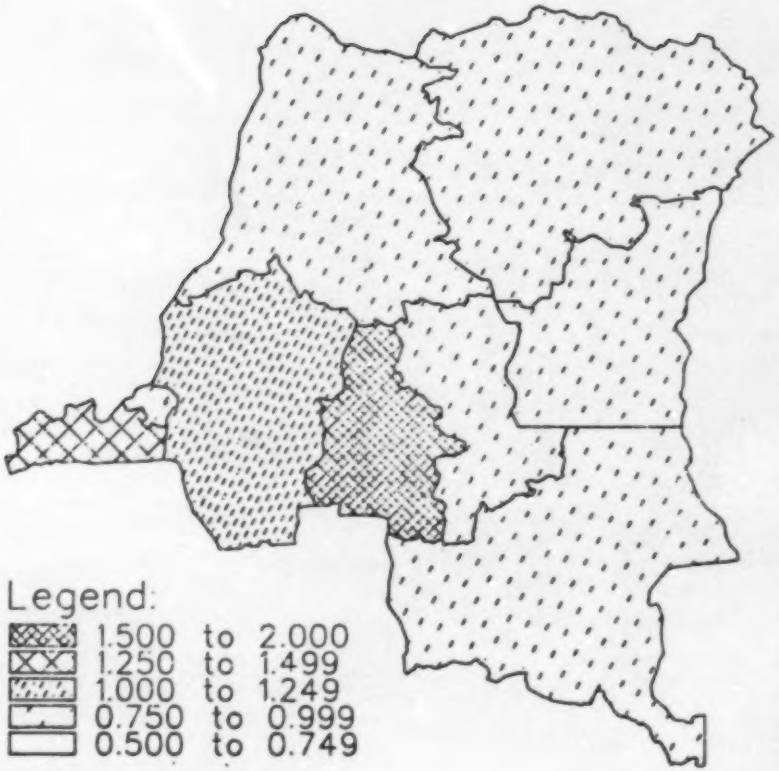
ZAIRE

TOTAL PRIMARY ENROLLMENT

Lorenz Curve



RI by District



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World Bank Publications of Related Interest

The Johns Hopkins University Press, April 1982. About 216 pages (including bibliography, appendixes, index).

LC 81-47612. ISBN 0-8018-2575-X, $18.50 hardcover.

Ability in Pre-Schoolers, Earnings, and Home Environment

Roger Grawe

World Bank Staff Working Paper No. 322. April 1979. 92 pages (including appendix, bibliography).

Stock No. WP-0322. $5.00.

Education and Basic Human Needs

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World Bank Staff Working Paper No. 450. April 1981. iv + 64 pages (including 2 annexes).

Stock No. WP-0450. $5.00.

Attacking Rural Poverty: How Non-Formal Education Can Help

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LC 73-19350. ISBN 0-8018-1600-9, $25.00 (£11.00) hardcover; ISBN 0-8018-1601-7, $10.95 (£4.25) paperback.

Spanish: La lucha contra la pobreza rural: el aporte de la educación no formal. *Editorial Tecnos,* 1975.

ISBN 84-309-0559-6, 725 pesetas.

Farmer Education and Farm Efficiency

Dean T. Jamison and Lawrence J. Lau

This book complements earlier studies by reviewing existing literature on the relation between farmer education and farm efficiency. The authors then are able to confirm these earlier findings—which strongly suggest that the more educated farmers are more productive, particularly where new inputs and methods are available—by using new techniques to examine new data sets from Korea, Malaysia, and Thailand. Price data from Thailand are used to test the effect of education on the ability of a farmer to adjust the prices and composition of his output to the prevailing prices.

Cost-Benefit Analysis in Education: A Case Study of Kenya

Hans Heinrich Thias and Martin Carnoy

Attempts to measure the benefits of various types of education in monetary terms, and to assess the role of earnings in the demand for and supply of educated people in a country.

The Johns Hopkins University Press, 1972. 208 pages (including 5 annexes, bibliography).

LC 72-187064. ISBN 0-8018-1335-2, $6.95 (£4.25) paperback.

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Nancy Birdsall

World Bank Reprint Series: Number 160. Reprinted from Research in Population Economics, *vol. 2 (1980):115-50.*

Stock No. RP-0160. Free of charge.

The Economic Evaluation of Vocational Training Programs

Manuel Zymelman

A methodology for appraising the cost effectiveness of alternative methods of industrial training in developing countries.

The Johns Hopkins University Press, 1976. 134 pages (including chart, 3 appendixes, bibliography).

LC 76-4868. ISBN 0-8018-1855-9, $6.00 (£3.50) paperback.

Spanish: Programas de formación profesional: su evaluación económica. *Editorial Tecnos, 1977.*

ISBN 84-309-0747-5, 415 pesetas.

Education

Wadi D. Haddad, coordinating author

Emphasizes the pervasive role of education in development and draws extensively on the Bank's experience in education for two decades and its close collaborative ties with other international agencies, individuals, and institutions of developing countries.

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Stock No. WP-0323. $5.00.

Public Expenditures on Education and Income Distribution in Colombia
Jean-Pierre Jallade

Examines the allocation of educational benefits among various population groups and considers the distributional effects on taxes that pay for public subsidies in general.

The Johns Hopkins University Press, 1974. 90 pages (including 2 annexes, bibliography).

LC 74-4216. ISBN 0-8018-1628-9, $5.00 (£3.00) paperback.

Publishing for Schools: Textbooks and the Less Developed Countries
Peter H. Neumann

World Bank Staff Working Paper No. 398. June 1980. ii + 79 pages (including 2 appendixes).

Stock No. WP-0398. $5.00.

Student Learning in Uganda: Textbook Availability and Other Factors
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World Bank Reprint Series: Number 163. Reprinted from Comparative Education Review, *vol. 24, no. 2 (June 1980):206–20.*

Stock No. RP-0163. Free of charge.

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Torsten Husen, Lawrence J. Saha, and Richard Noonan

World Bank Staff Working Paper No. 310. December 1978. ii + 133 pages (including annex, bibliography).

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